

## 'It's Important to Know In Time'

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## The Newspaper of the Industry

# Air Conditioning & REFRIGERATION

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## 'Written To Be Read on Arrival'

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## Inside Dope

By George F. Taubeneck

Payment Plans Change  
Commissions on Way Out  
Territorial Quotas  
Stability of Earnings  
Market Analyses

### Payment Plans Change

A good salesman makes money for his company. Year in, year out, that fact remains. But methods of paying salesmen have shown marked changes since 1935. These changes for the most part have been gradual and in consistent directions, but the difference in the total picture over a period of 10 years is significant.

Today does not in any sense mark the end of a cycle. The trends already established are not going to veer sharply at this point. Thus the major pattern of salesmen's compensation for postwar also is discernible.

A recent survey of more than 100 corporations in the most important manufacturing industries has revealed the thinking of sales executives about this question. Conducted by the market research and postwar planning department of McClure, Hadden & Ortman, Inc., of Chicago, known to the refrigeration industry especially for the work they once did as business consultants to REMA, the survey points out the direction of major trends in the field today.

I. There is a strong trend toward paying salesmen a base salary plus a bonus determined by volume, profit, and other factors relative to the salesman's efforts and the ledger of the company as a whole.

II. The amount of the salesman's total income is being determined more and more upon an accurate analysis of the job he is doing—in terms of difficulties to be met, experience required, special qualifications called for, and the recognized scale of earnings for similar jobs elsewhere in the industry.

III. Sales planning based upon careful analysis of local and national market conditions is growing in extent and in detail application, especially toward establishing satisfactory quota allotments for salesmen in their territories.

### Commissions on Way Out

Emphasis 10 years ago was entirely the other way. Forty-two per cent of the companies represented in the survey then were paying flat salaries to their salesmen, plus expense accounts under little or no control but allowed merely as incurred. Thirty-three per cent of the companies used commission plans—either on a "straight commission" basis, or on a drawing account basis. The remaining 25% paid a salary plus expense account plus bonus plans.

Few companies have changed their sales compensation policies radically since the beginning of the war. The picture today, 10 years after 1935, thus represents actually only six or seven years of normally progressive growth.

Most of the firms surveyed now employ salary plus expenses plus bonus plans. Experience seems to have proved that this combination secures the best balance between the stability and control made possible by a consistent salary base, and the incentive to individual effort offered by bonus payment.

### Territorial Quotas

Quotas for individual territories today are the rule rather than the exception. Sixty-nine per cent of the companies surveyed have established such quotas. But only 53% tie up bonus incentives with their quota figures; and there is still general dissatisfaction among salesmen with

Concluded on Page 9, Column 1

## Warn Auto Men Of Needs For Other Products

Refrigerators, Etc. Will Share In Retooling Programs, Says WPB

DETROIT — "WPB can't show favoritism to the automobile industry in its reconversion problems, for there are other industries which have similar problems," warned Henry P. Wilson, recently named to head WPB activities in converting the auto industry back to peacetime production, at a press conference here.

"Refrigerators, household goods, and many other items are also vitally needed in homes," he emphasized.

Mr. Wilson did point out, however, two factors in this connection: Machine tools needed by the auto industry require a long time for production; the vast auto industry is largely centered in Detroit, and a long delay in reconversion would probably create serious unemployment here.

WPB Chief J. A. Krug, in a statement made at the same time in Washington, D. C., further explained the recently announced programs for machine tools and construction work to reconvert the automobile industry. WPB announced a \$50 million machine tool program and a \$35 million construction program for the auto industry which gives orders for these programs an AA-3 priority rating, just below military orders.

Mr. Krug emphasized that one of the most critical factors confronting a number of industries in the United States was the need for securing tools and equipment necessary to resume civilian production, without which such production would be seriously delayed.

"Many of these tools and this equipment," he said, "take a long time to manufacture and, therefore, it is important to start production as early as possible. He pointed out, however, that in general no preference ratings would be assigned except for "filling in" and "bottle-neck" tools and pieces of equipment without which a civilian production line would be unable to run.

"This policy will assist industries with a long lead time tools, such as the automobile industry, to get ready for production," Mr. Krug explained.

"It is not possible at this time," Mr. Krug said, "to authorize the procurement by industries desiring to build new plants or set up entirely new production lines of all of the

(Concluded on Page 29, Column 2)

## Pacific War Needs May Delay Radios

WASHINGTON, D. C. — Radios aren't likely to become generally available to the public within a year after V-E day, despite many predictions to the contrary, it is believed by some officials in the War Production Board.

So much radio and radar equipment will be required in the Pacific war, and much of it will differ from that used in Europe, that military radio production won't see any cut-backs and may possibly increase, one official declared.

It is considered doubtful by some WPB officials that there will even be any "authorization" for civilian radio production during this year, let alone actual production, regardless of the outcome of the war in Europe.

Members of the radio industry are reported in substantial agreement with this view, declaring that recent

(Concluded on Page 29, Column 3)

## Gov't Agencies To Aid Deferral Of Repairs

WASHINGTON, D. C. — Main offices of government agencies here, following conferences with the National Refrigeration Service Council, have pledged specific assistance in the matter of obtaining further deferments of experienced refrigeration repairmen.

Following a three-day session with representatives of Selective Service, WPB, WMC, and OCR, in which the critical situation in repair manpower was outlined to these agencies, W. Ray Kromer, chairman of the National Council, was able to advise Local Refrigeration Service Councils as follows:

"Concerning deferment of experienced refrigeration service men under 30 years of age, WPB has notified field offices by telegram to certify percentage of men for any one organization requesting certification of any number under seven, balance will automatically be certified in Washington.

"If difficulty is experienced in obtaining certification of new or old cases, request that local WPB offices call Webster Powell, WPB, Washington, phone number Republic 7500, extension 74108.

"For all experienced repairmen over 30 years of age employed full time, National Office of Selective Service has agreed to intercede should any state director not recommend deferment of experienced refrigeration repairmen to local board of any qualified case completely processed but rejected.

"Should state director not cooperate on appeal, call Col. G. H. Baker, Republic 5500, Extension 40, Washington. He will intercede with state director."

It should be noted that all the steps possible locally should be taken, including an appeal to the state director, before a call is put through to Col. Baker.

Mr. Kromer suggested that in localities where shortage of refrigeration repairmen is reaching a critical stage, that Local Refrigeration

(Concluded on Page 32, Column 1)

## Westinghouse Takes Over Operations of Elevator Subsidiary

JERSEY CITY, N. J. — Dissolution of the Westinghouse Elevator Co. here and taking over of the air conditioning and elevator activities of the subsidiary by the parent firm was recently announced by A. W. Robertson, chairman of the board of Westinghouse Electric & Mfg. Co.

Ellis L. Spray, who was vice president and general manager of the elevator company, has been elected vice president of the parent company in charge of elevator and air conditioning activities. Some months ago the air conditioning division was transferred to the elevator company.

Ross Rathbun and Walker G. White will continue as managers of the air conditioning and elevator divisions, respectively, announced Mr. Spray.

Mr. Spray has been with Westinghouse since 1918, when he joined the company as an electrician's helper. In 1922 he became works manager of the Mansfield, Ohio, plant and in 1929 took the same position at the Jersey City works.

About the time of Pearl Harbor, Mr. Spray became manager of the new Westinghouse merchant marine division at Lester, Pa., which produced propulsion machinery for the U. S. Maritime Commission's merchant fleet.

## All P-126 Ratings for Condensing Units and Lowsides Are Revoked

Air Conditioning Given Department Status by G-E

All Orders So Rated To Be Canceled; Some Re-rating Possible

NEW YORK CITY — Establishment of the air conditioning department as one of the six major operating departments of the General Electric Co. has been announced by C. E. Wilson, president of the company. Operations pertaining to heating, air conditioning, and commercial refrigeration have previously been the responsibility of the company's appliance and merchandise department.

The new department will have its headquarters at Bloomfield, N. J., and George R. Prout has been designated as general manager.

The new department, according to Mr. Wilson, will select and utilize appropriate marketing channels and methods for all of its products except air conditioning for rail transportation, which remains a responsibility of the transportation divisions of the company. Sales divisions of the new department are as follows:

The industrial, marine, and contractor equipment division (including condensing units and compressors, (Concluded on Page 32, Column 2)

## Regional Managers For Kelvinator's Lines Are Named

DETROIT — Still engaged in war work, three staff members have been designated to handle Kelvinator's three huge regional territories in its national postwar sales activities, Charles T. Lawson, Nash-Kelvinator vice president in charge of Kelvinator Division Sales, has announced.

"We intend to continue, into the postwar period, the streamlining program successfully undertaken by Kelvinator in 1940, when the distribution operation was tightened all along the line," Mr. Lawson said, recalling that Kelvinator at that time sharply reduced prices, trimmed its model line, concentrated its output in the hands of selected retailers, and more than tripled its sales.

"There will be no basic change in these policies," he added, "except that they will be applied more vigorously to our own distribution organization. Just as the best retailers were selected on their market

(Concluded on Page 4, Column 5)

## G-E Names Director of Consumers Institute

BRIDGEPORT, Conn. — Elizabeth Woody has been appointed director of the General Electric Consumers Institute, C. R. Pritchard, general sales manager of the company's appliance and merchandise department, has announced.

Miss Woody was director of foods for McCall's Magazine from 1935 to 1944 and previously had long experience as an advertising copywriter and director of daytime radio programs.

As director of the Institute, Miss Woody will head up a broad program of basic food research and an extensive consumer information program designed to disseminate as widely as possible practical solutions to home-making problems. Miss Woody and her staff will test all appliances in

(Concluded on Page 14, Column 1)

WASHINGTON, D. C. — Direction 1 to Order P-126, which became effective April 14, revoked the use of automatic ratings under the order for the purchase of new condensing units and lowside units (such as unit coolers).

The revocation applies to every order for such equipment rated under P-126 that was unfilled, even though the order may have been in the hands of the manufacturer.

It is stated officially as follows:

"This direction prohibits the use of preference ratings assigned by Order P-126 to get any new condensing unit, or any new cabinet or other new insulated enclosure, or any new lowside units, such as unit coolers), or any system containing a new condensing unit or a new cabinet or other insulated enclosure. The only exception is where a hermetically sealed condensing unit is ordered for emergency maintenance or emergency repair of a specific job (but not for inventory)."

Purpose of the direction, declared WPB officials, is to eliminate some "abuses" which have sprung up in the use of the ratings under the P-126 order, chiefly from the standpoint of their use to build inventories. Also, it was explained, it will help to straighten out the manufacturers' "order boards," so that orders for truly essential needs will be filled.

### UP TO MANUFACTURERS

It is up to the manufacturers to sift out the orders on their books and to find those with P-126 ratings and send them back, declared WPB officials. If the rating merely said that it was "AA-1 or AA-2 under MRO" it is the manufacturer's responsibility to find out whether the authority for the rating was Order P-126 or some other priority order. In most cases, say the WPB men, it will be found that such ratings were founded on P-126.

When the service agency gets back the purchase order that was rated under P-126, it must cancel it out. He can re-rate it if the customer can give him a purchase order which was rated in accordance with CMP Regulations 5 or 5A, or for an installation permitted under paragraph (d) of Order L-38, or to fill an order rated on Forms WPB-1319 or GA-1456.

### DOESN'T AFFECT PARTS

Direction 1 does not affect the use of P-126 ratings in the procurement of repair parts for emergency maintenance and repair, such as compressor bodies, controls, expansion valves, crankshafts, seals, etc. It also excepts hermetically sealed condensing units ordered for emergency maintenance or repair of a specific job.

WPB officials declare that Direction 1 makes the following provisions effective immediately:

1. If a service agency (such as a repair shop or dealer in refrigeration equipment) has qualified to use P-126 ratings, such ratings are revoked for the items named. The service agency may no longer apply then and must immediately cancel all orders bearing such ratings or inform the supplier that the order is no longer to be treated as rated.

2. If a dealer, distributor, or manufacturer has accepted orders for these items bearing P-126 ratings (under WPB regulations such orders must bear the required certification) they cannot make delivery. Furthermore, if they have extended such ratings,

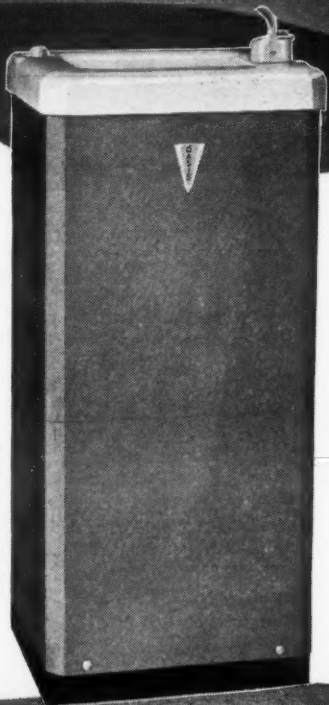
(Concluded on Page 4, Column 1)



# IT'S AN OASIS!

For efficient, low-cost delivery of cool, refreshing water, this trim, ruggedly-built OASIS Electric Water Cooler is unsurpassed! Its "angle-perfect" splash-free bubbler action makes it the most agreeable way to eliminate thirst. And you can depend on OASIS for extra years of carefree, 24-hour-a-day service because they're designed and built by EBCO—an organization with 20 years of pioneering leadership in the electric water cooler field.

**OASIS**  
Electric  
Water Coolers



THE EBCO MANUFACTURING COMPANY  
401 W. Town Street  
Columbus 3, Ohio

## Penn Legislature Will Investigate Instalment Houses

HARRISBURG, Pa.—A resolution authorizing an investigation of finance companies and instalment dealers has been given final passage by the Pennsylvania Legislature.

Designed to uncover the "nefarious practices" of shady concerns, the probe was requested by Gov. Edward Martin, who emphasized that he had no intention of interfering with legitimate finance companies or instalment houses and reputable department stores extending credit.

Under terms of the resolution, the inquiry will be conducted by the Joint State Government Commission, in cooperation with the Secretary of Banking, State Insurance Commissioner, and the Attorney General. The Joint State Government Commission is a legislative fact-finding agency.

The resolution gives power to subpoena witnesses and compel companies under investigation to furnish their books and records pertaining to the operation and management of their affairs.

The probers are instructed to report back to the Legislature as soon as possible their findings relating to "nefarious, unscrupulous and improper practices," together with recommendations for legislation to eliminate such evils.

"Losses suffered from these nefarious practices," the resolution asserts, "fall on the shoulders of those least

## OPA Sets Prices on 3 Makes Of Farm and Home Freezers

WASHINGTON, D. C.—Maximum prices have been established by OPA on three additional makes of home and farm freezers produced by the Tyler Fixture Corp. of Niles, Mich., Robbins & Burke, Inc., of Cambridge, Mass., and Master Refrigeration Service, Inc., of Milwaukee.

Prices range from a low of \$198 for sales to consumers of the Master

firm's 2.5-cu. ft. box powered with a 1/4-hp. condensing unit to \$650 set for consumer sale of the Robbins & Burke 20-cu. ft. freezer using a 1/2-hp. condensing unit.

Actual freight charges and actual shipping charges (not in excess of \$6) may be added to the prices shown in the tables below. OPA, however, has set crating charges on each of the Master units.

### TYLER PRICES

Model	Size	To distributors	To dealers	To consumers
H-12	12 cu. ft. (complete with compressor, valve, and control)	\$191	\$229.20	\$382
H-12	12 cu. ft. (less compressor, valve, and control)	126	151.20	252
T-21	15 cu. ft. (complete with compressor, valve, and control)	230	276.00	460
T-21	15 cu. ft. (less compressor, valve, and control)	161	193.20	322

### MASTER REFRIGERATION SERVICE CO. PRICES

Item	Size	To distributors	To dealers	To consumers	Crating charges
Masterfreezer Model 1250	12.5-cu. ft. 1/4-hp. condensing unit	\$210	\$252.00	\$420	\$6
Masterfreezer Model 1800	18-cu. ft. 1/4-hp. condensing unit	280	336.00	560	6
Masterfreezer Model 950	9.5-cu. ft. 1/4-hp. condensing unit	170	204.00	340	5
Masterfreezer Model 750	7.5-cu. ft. 1/4-hp. condensing unit	155	186.00	310	5
Masterfreezer Model 250	2.5-cu. ft. 1/4-hp. condensing unit	99	118.80	198	4

### ROBBINS & BURKE PRICES

Item	Size	To distributors	To dealers	To consumers
Model No. 15	15-cu. ft. 1/4-hp. condensing unit	\$225	\$270	\$450
Model No. 20	20-cu. ft. 1/4-hp. condensing unit	325	390	650

able to bear them—the persons in lower income brackets who for want of ready cash are obliged to purchase even necessities on deferred payment basis—to enrich those guilty of chicanery.

Veterans, most of whom gave up lucrative positions of employment in answer to the call of war, may be, by the very reason of their patriotism, financially unable to attain their just aims without resorting to instalment purchases, and, accordingly, may become the victims of the designing manipulations of dishonest finance companies and others dealing in consumer credit.

As the resolution authorizing the investigation was passed, Senator Maxwell S. Rosenfeld introduced a bill which would empower the State Department of Banking to supervise finance companies and instalment houses selling merchandise at retail on the instalment payment plan.

The legislation proposed by Sena-

tor Rosenfeld would empower the banking department to fix maximum finance charges and classify the various types of instalment sales.

## American Refrigerator Tells Sales Policies

MINNEAPOLIS—Although ceiling prices for sales of its home and farm freezers to distributors, dealers, and consumers have been established, American Refrigerator & Machine, Inc., here is not in quantity production at the present time, announces R. W. Dreher, president.

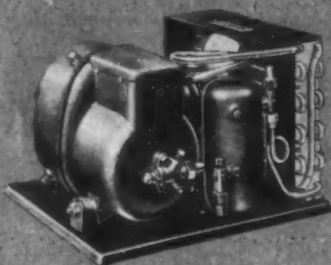
Difficulties of obtaining materials and components prevent planned quantity production, so the company is merchandising the few freezers it does produce now directly through dealers. When normal production is resumed, a distributor organization will be established, Mr. Dreher said.



"You get real cooperation . . .  
when you *Sell Servel*"

"Servel's new 'Supermetic' condensing units will serve dealers and fixture manufacturers in every vital field

1. STORE FIXTURES
2. MILK COOLERS
3. HOME LOCKERS
4. BEVERAGE COOLERS
5. VENDING MACHINES
6. ROOM COOLERS
7. FARM FREEZERS
8. WATER COOLERS
9. INDUSTRIAL COOLING
10. VEHICLE REFRIGERATION



"Things seem to move faster and more smoothly when you're backed up by an outfit that is always trying to help you. We didn't give much thought to that side of the picture when we first started buying units from Servel, but now we realize this help has saved us money and improved acceptance of our product.

"We manufacture a line of store fixtures, and every time we bring out a new model, we put it through Servel's hot-room tests. Their engineers check every feature. When the report comes back, we know what the job will do, all the way from Maine to Mexico. Sometimes these tests show up a weakness, and by correcting it before we go into production, we save ourselves a lot of headaches.

"Servel's sales force is helpful

too. They often refer dealers to us, and this has given us an opportunity to get business that we could not otherwise obtain.

"It goes without saying that Servel units have been good performers in the field. Our service problems are negligible, and we've found that service men generally understand how to correct minor difficulties quickly when service is needed.

"We know Servel has taken on some of the toughest war assignments and has carried them through successfully. We can see this experience reflected in improvements which will make the post-war unit even better than the present line."

Such remarks are typical of many made by Servel customers. For more details on Servel co-operation—write today.

**FREE:** A new folder, just off the press gives a preview of Servel's new Supermetic line. It is yours for the asking. Address Servel, Inc., Dept. RN, Evansville 20, Ind.



**SERVEL, Inc.**

Electric Refrigeration Division, Evansville 20, Indiana

## Service Engineers Should Know . . .

### THE PURITY OF "VIRGINIA" SULFUR DIOXIDE IS CAREFULLY GUARDED

—the content of each cylinder—large or small—is analyzed 2 separate times.



#### 1. CLEANLINESS TEST

A measured sample drawn from each container must be water-white in color and when boiled to dryness must leave no dirt, oil or other residue. This test detects undesirable impurities.

#### 2. MOISTURE TEST

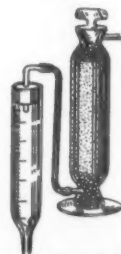
A sample of known weight from each cylinder is passed through P<sub>2</sub>O<sub>5</sub> (a desiccant). Moisture calculated by the increased weight of the tube must not exceed 50 parts per million; low moisture prevents freeze-ups and oil-sludging.

### EXTRA PRECAUTIONS

To prevent any possible contamination of "Extra Dry Esotoo" every cylinder is dry cleaned and finally rinsed with pure SO<sub>2</sub> before filling.

Each cylinder valve is inspected and reserviced to assure trouble-free operation—this saves time and money for the service engineer.

The name "EXTRA DRY ESOTOO" on the cylinder is your guarantee of quality. Sold by refrigeration supply jobbers everywhere.



**VIRGINIA Smelting Co.**

WEST NORFOLK, VA.

76 BEAVER ST., NEW YORK 5 — 131 STATE ST., BOSTON 4  
Agents for Kinetic's "Freon-12" — "Freon-22" — "Freon-11"



*Only Henry makes a Diaphragm Packless Valve that is*

**NON-DIRECTIONAL**

**E**XPERIENCE has taught the refrigeration industry that in a Henry Product it can always reasonably expect some extra value and a better feature of design and construction. The Henry Packless Valve is an outstanding example.

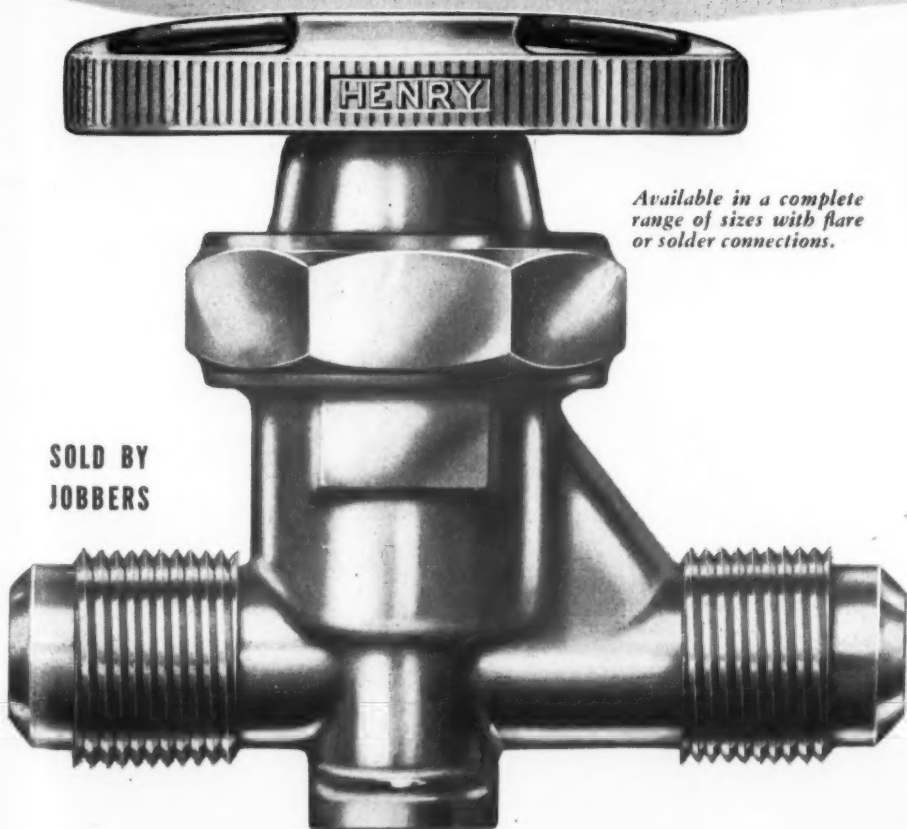
By means of a patented balancing channel in the lower valve stem, explained in detail below, the Henry Diaphragm Packless Valve cannot stick shut regardless of the pressure differential above or below the valve seat. When using a conventional valve, there is always the possibility that a valve installed in reversed position could fail to open if sufficiently high pressures should develop above the seat. The Henry Diaphragm Packless Valve, however, can be relied upon to give positive

performance under all conditions of service because it is truly non-directional.

You will also like the Henry feature of having inlet and outlet ports in line on two way and three way valves. This eliminates tube bending and results in neater lines and lower installation costs.

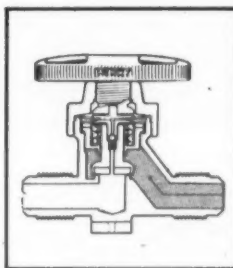
During the war Henry Diaphragm Packless Valves have been widely favored by all branches of the armed services. It is only natural that, as our country gradually turns to the problems of Peace, this Henry Product again will be the logical choice of manufacturers, jobbers, contractors and service organizations everywhere.

## *The Difference* Between a Henry Non-Directional Balanced-Action Diaphragm Packless Valve and a Conventional Packless Valve

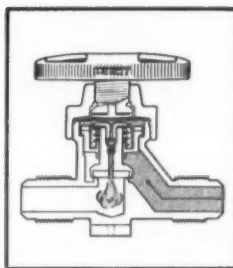


**SOLD BY  
JOBBERS**

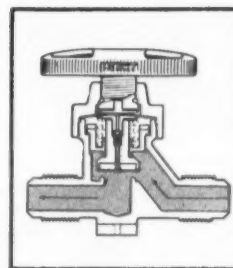
*Available in a complete range of sizes with flare or solder connections.*



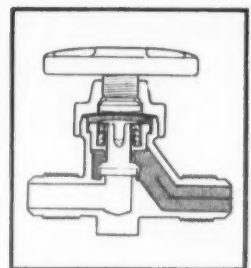
**BALANCED-ACTION VALVE IN CLOSED POSITION**—High pressure above the seat, low pressure below the seat. High pressure regions are shown in color. Pressure in spring cage below diaphragm is the same as that in main passage of valve body above the seat. This is due to seepage between the lower stem and the guide. Downward pressure of the bearing plate on the diaphragm seals the upper port of the balancing channel.



**OPENING THE BALANCED-ACTION VALVE**—As hand wheel is turned to open valve the diaphragms, because of pressure beneath them and their own snap action, rise and expose the upper port of the balancing channel. The high pressure, shown in color, unseats ball check and is instantly released through the open channel to the low pressure region below the valve seat, thus achieving "balanced-action" by equalizing pressures.



**BALANCED-ACTION VALVE IN FULL OPEN POSITION**—Equalization or balancing of pressures above and below the seat, as shown in color, guarantees that this valve can never "stick shut" but will always open positively, regardless of original differential in pressures. When there is high pressure below the seat and low pressure above, the balanced valve opens easier than other types because of the light weight spring.



**CONVENTIONAL TYPE WITHOUT BALANCED-ACTION**—As hand wheel is turned to open valve the diaphragms rise. When the differential between high pressure, shown in color, above seat and low pressure below seat is greater than force exerted by heavy spring, stem "sticks shut"—valve remaining closed. The heavy spring required in this type of valve greatly increases diaphragm wear and strain and causes stiff closing.



**HENRY VALVE COMPANY**

3260 WEST GRAND AVENUE, CHICAGO 51, ILLINOIS

EXPORT DEPARTMENT, 13 EAST 40TH STREET, NEW YORK 16, N. Y. • CABLE: ARLAB

PACKLESS AND PACKED VALVES • STRAINERS • DRYERS FOR REFRIGERATION AND AIR CONDITIONING  
AMMONIA VALVES • FORGED STEEL VALVES AND FITTINGS FOR OIL, STEAM AND OTHER FLUIDS



## Direction 1 To P-126 Cancels Ratings For Condensing Units and Lowside Assemblies

(Continued from Page 1, Column 5) they must immediately cancel them or advise the supplier that such orders are no longer to be treated as rated. In addition, if the customer who has applied a P-126 rating for such items fails to cancel such ratings, they may not treat it as a valid rating if they know or have reasonable cause to believe that it should be canceled.

3. If a manufacturer has accepted orders bearing P-126 ratings and has arranged to obtain these items from others by use of preference ratings assigned them for their authorized production schedule, they may not deliver such orders and must promptly adjust their outstanding orders for such items to the extent necessary to avoid having an inventory in excess of the inventory restriction in Section 944.14 (b) of Priorities Regulation 1.

4. A service agency that has received customers' ratings for these items may extend them to obtain such equipment or to replace inventory of these items delivered under customers' rated orders within the 90-day period permitted by paragraph (h) (1) of Priority Regulation 3 for extensions to replace inventory. Such customers' ratings may originate from Controlled Materials Plan Regulation 5 and 5A for an installation permitted under Paragraph (d) of Order L-38 or from ratings assigned on Forms WPB-1319, WPB-617, or GA-1450.

### Text of Direction 1

#### PART 1226—GENERAL INDUSTRIAL EQUIPMENT

[Preference Rating Order P-126, Direction 1]

#### CONDENSING UNITS, CABINETS, LOW-SIDE UNITS, AND SYSTEMS

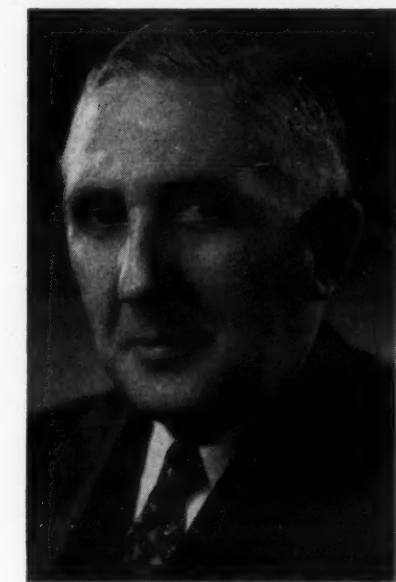
(a) **Purpose.** This direction prohibits the use of preference ratings assigned by Order P-126 to get any new condensing unit (as defined below), or any new cabinet or other new insulated enclosure, or any new low-side units (such as unit coolers), or any system containing a new condensing unit or a new cabinet or other new insulated enclosure. The only exception is where a hermetically sealed condensing unit is ordered for emergency maintenance or emergency repair of a specific job (but not for inventory).

It does not affect the use of such ratings for repair parts for a condensing unit, or repair parts for a cabinet or other insulated enclosure, or repair parts for a low-side unit.

As used in this direction, a "condensing unit" means any new assembly in which is incorporated a compressor and a condenser, and which is desired for use in any refrigeration or air conditioning system. It includes any such assembly whether or not the compressor and condenser are actually interconnected, and whether or not the assembly also includes a flywheel, motor, controls, base, or other accessories.

#### (b) Restriction on ratings and deliveries.

(1) All preference ratings applied under Order P-126 for a new condensing unit, or a new cabinet or other insulated enclosure, or a new low-side unit, or a system containing a new condensing unit or a new insulated enclosure, are hereby revoked. No service agency or any other person shall apply any preference rating assigned by Order P-126 to get any of such items. Any service agency who has



H. C. PATTERSON



C. J. BACHMAN



S. R. SELLERS

applied a preference rating under Order P-126 to an order or orders for any of such items must immediately, in the case of each unfilled order for such items to which he has applied a P-126 rating, either cancel the order or inform his supplier that it is no longer to be treated as rated.

(2) Any person (including dealers, distributors, and manufacturers) who has accepted an order for a new condensing unit, or for a new cabinet or other insulated enclosure, or for a new low-side unit, or for a system containing a new condensing unit or new insulated enclosure, bearing a P-126 rating, shall not make delivery of any such items to fill such order. A person who has accepted such an order for any of such items and has extended the rating to get them to fill the order, must immediately, in the

case of each order to which he has extended or applied a rating for such items, either cancel the order or inform his supplier that it is no longer to be treated as rated (unless his customer's order is rated, as explained in (b) (3) below). A manufacturer who has accepted an order bearing a P-126 rating for any of such items, and has used a preference rating assigned him for his authorized production schedule in ordering them from his supplier, must promptly adjust his outstanding orders for them, in accordance with § 944.14 (b) of Priorities Regulation 1, to the extent necessary to avoid his having an inventory of such items which (as a result of the revocation of the P-126 ratings from his customers), would be in excess of the inventory restriction in that regulation. If any purchaser who has applied a P-126 rating or extended such a rating, or applied some other rating to get such items to fill an order rated under P-126, should fail to cancel it, as required by this direction, the supplier may not treat it as a valid rating if he knows or has reasonable cause to believe that it should be cancelled by his customer.

(3) A service agency who has applied a rating under Order P-126 to get a new condensing unit or insulated enclosure, or a new low-side unit, or a system containing a new condensing unit or insulated enclosure, to fill a purchase order from his customer which was rated in accordance with CMP Regulations 5 or 5A and for an installation permitted under paragraph (d) of Order L-38, or to fill an order from his customer rated on Forms WPB-1319 or GA-1456, should immediately extend his customer's rating for the items ordered for this purpose (in addition to cancelling the P-126 rating). If the agency has delivered such an item to fill a customer's order rated in accordance with CMP Regulations 5 or 5A and for an installation permitted under paragraph (d) of Order L-38, or rated on WPB-1319 or GA-1456, and has used a P-126 rating to replace in inventory the item delivered to the customer (instead of extending the customer's rating for that purpose), the service agency should immediately extend the customer's rating (if within the three months period permitted under paragraph (h) (1) of Priorities Regulation 3), in addition to cancelling the P-126 rating. Any such rating extended in accordance with this Direction is a rerating of the order under the provisions of Priorities Regulation 12, and constitutes a substitution of the extended rating in place of the P-126 rating.

(c) (1) **Hermetically sealed units.** The restrictions in paragraph (b) do not apply to the use of a P-126 rating applied to get a hermetically sealed condensing unit when required for the emergency replacement of a similar unit for a specific system which has broken down or is about to break down, and requires a new unit for immediate installation. However, this does not permit the use of any P-126 rating to get such units for inventory.

(2) **Individual applications.** The owner of any system who needs a new condensing unit or insulated enclosure, or a new low-side unit, for the emergency replacement of one which has been destroyed by fire or other casualty, or is broken down beyond repair, if unable to obtain it by the use of his CMP 5 or 5A rating, within the time required, may apply for additional priorities assistance to the nearest field office of the War Production Board. Issued this 14th day of April, 1945.

WAR PRODUCTION BOARD,  
By J. JOSEPH WHELAN,  
Recording Secretary.

## Kelvinator Appoints Regional Managers

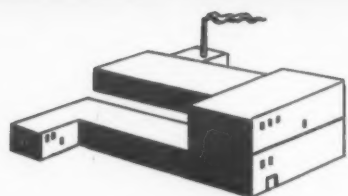
(Continued from Page 1, Column 4)

areas, greater responsibilities will be placed in the hands of men best qualified to do the big postwar jobs.

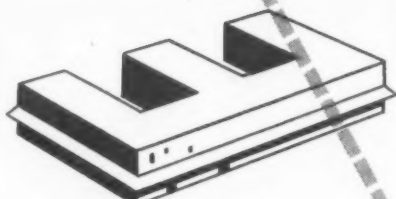
The country has been sliced into three wide territories—east, west, and Pacific, assigned respectively to S. R. Sellers, H. C. Patterson, and C. J. Bachman.

Eastern Manager Sellers was range sales manager of Kelvinator before the war, Western Manager Patterson was Cincinnati zone manager before the war. C. J. Bachman continues as Pacific Coast Manager.

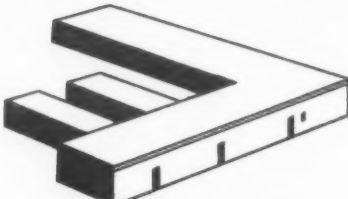
A NEW GIANT INDUSTRY—  
"FROZEN FOODS" will need  
Dependable Refrigerating Power



FOOD PROCESSING PLANTS



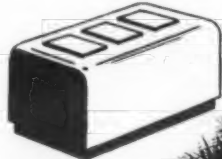
LOCKER PLANTS



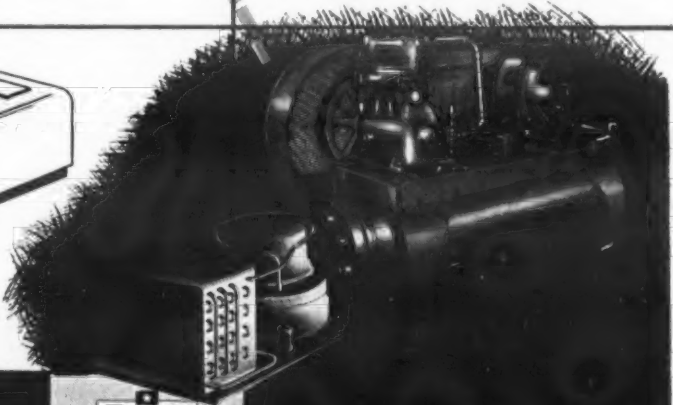
FOOD WAREHOUSES



RETAIL STORES



HOME FREEZERS



**UNIVERSAL COOLER**

UNIVERSAL COOLER CORPORATION • 1200 E. 12th St., Marion, Ohio • BRANTFORD, ONTARIO



BUY MORE  
WAR BONDS  
AND HOLD THEM!



In the West it's  
**REFRIGERATION SERVICE INC.**  
Pacific Coast Supply Jobber  
since 1928

Your letterhead will bring our latest  
catalog—also our House Organ.

"The Liquid Line"



3109 Beverly Blvd.  
LOS ANGELES 4, CALIF.

**NIBCO WROT**

AND CAST

VALVES AND FITTINGS

for Refrigeration

NORTHERN INDIANA BRASS CO.  
ELKHART, INDIANA

**HARDER Freez**  
HOME LOCKER

COMPARE HARDER-FREEZ and see why experts say it will out-sell any other unit of its kind! 12 cubic-foot capacity. Temperature control. 25% more insulation. OKAY Plate Coil. Modern design. Available this year.

WRITE  
TODAY

HARDER REFRIGERATOR CORP.  
Dept. F-4, Cobleskill, N. Y.  
Rush data on HARDER-FREEZ.

Name \_\_\_\_\_

Address \_\_\_\_\_





# "BEST SELLER"



Published and furnished by Kelvinator without charge to retailers, for their use as a service to home owners, this book, "Kelvinator in the Home of Your Dreams," is now a "best seller" in every sense of the word!

The story is this . . .

Kelvinator merchandising executives have constantly studied to determine the most effective methods of pre-selling the postwar market for Kelvinator Retailers. Their aim—to make Kelvinator part of the demand in every family for a modern kitchen . . . to have Kelvinator help those families plan in full and

complete detail the kitchen of their dreams.

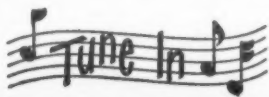
So, Kelvinator called in six famous architects . . . had them develop and put in one book many important new ideas and principles of kitchen convenience . . . showing with dramatic illustrations how perfect a kitchen scientifically designed around Kelvinator can be.

Announcement of this book was made only a few months ago . . . but already distribution is in the second million copies!

The huge demand for "Kelvinator in the Home of Your Dreams" by home owners, present and future, proves again how accurately Kelvinator has analyzed consumer interest for its Retailers . . . how surely it is capitalizing on this consumer interest by pre-selling now to give Kelvinator Retailers a big "ready-to-buy" market as soon as products are available.

Another answer to "What's Ahead for Kelvinator Retailers?" . . . this "best seller," and the "retail-minded" thinking back of it, emphasize why retailers with the Kelvinator Franchise hold "the most valuable franchise in the Appliance Industry."

## LOOK AHEAD WITH



Every Sunday 4:30-5:00 P. M. EWT for the new NASH-KELVINATOR RADIO SHOW, starring the ANDREWS SISTERS—Over the entire Blue Network.



**FOR APPLIANCE DISPLAY**—a new book of modern store and appliance department layouts to help Kelvinator Retailers plan for greater sales through better display.

# Kelvinator

DIVISION OF NASH-KELVINATOR CORPORATION  
Kenosha • Milwaukee • DETROIT • Grand Rapids • Lansing





## HOUSEWIVES EXPRESS PREFERENCE FOR REFRIGERATORS EQUIPPED WITH STAINLESS STEEL SHELVES



### WALL WIRE PRODUCTS COMPANY

11333 GENERAL DRIVE  
PLYMOUTH, MICHIGAN

Makers of STAINLESS STEEL AND

RETINNED REFRIGERATOR SHELVES AND WELDED WIRE PRODUCTS

### J. G. Harris Appointed Frigidaire Pittsburgh Commercial Mgr.

PITTSBURGH—J. G. Harris, who has been with Frigidaire Division, General Motors Corp., in various capacities for the past 20 years, has been named commercial sales manager of the Pittsburgh branch.

Mr. Harris started with Frigidaire in 1925 at the factory as commercial sales engineer and assistant manager. In 1931 he went to Cleveland as district sales engineer, later becoming district sales representative. After a term as sales engineer of the Chicago branch he returned to the factory in 1942 as tool engineer in Plant 2.

### Group of Distributors Appointed by Admiral

CHICAGO—Admiral Corp. has announced the appointment of the following distributors to handle Admiral refrigerators and other appliances:

R. H. Kyle Co., Charleston, W. Va.; Baltimore Gas Light Co., Baltimore; Peaslee-Gaulbert Corp., Dallas, Tex.; Paxton & Gallagher Co., Omaha, Neb.; L. C. Lippert Co., Sioux Falls, S. D.; Herbert H. Horn, Los Angeles; Appliance Distributors, Inc., Portland, Me.; Northwest Supply Co., Butte, Mont.; Havre Jobbing Co., Havre, Mont.; Auto Parts Service, La Crosse, Wis.; J. A. Fleck Co., Fargo, N. D.; Edwards Supply Co., Lubbock, Tex.; and Mascon Distributors, Inc., Springfield, Mass.

## Retailers Must Keep Customary Records on Surplus Goods Sales

### OPA Sets Up Rules For All Resellers

WASHINGTON, D. C.—Retailers are required to keep their customary records, and all other resellers must keep specified records, on any sales they make of Government surplus property for which ceiling prices have been established in special orders, OPA has announced.

These requirements, which went into effect April 5, 1945, are similar to record-keeping provisions in OPA price ceiling regulations. Heretofore, no record-keeping was required in many special orders setting ceilings on different items of Government surplus property sold for civilian use.

The record-keeping is required for compliance purposes. OPA pointed out that, when no records of sales and prices are available for inspection, it is more difficult for OPA to check transactions for the purpose of determining if the ceiling has been exceeded.

The specific records required to be kept by resellers other than retailers are date of sale, name and address of buyer, description of commodity, quantity of sale, and price charged.

On resales of Government surplus property for which ceilings are not established by special orders, the existing regulations providing the applicable ceiling prices contain their

own record-keeping provisions.

Other changes in the general supplementary order establishing ceilings on sales by Government agencies and certain resales were also announced, as follows:

1. Sales by the Government of second-hand electric motors of 3/4 hp. or less will be subject to price control. These small motors, which have been in increasingly critical demand for operating household refrigerators, washing and ironing machines, etc., had been exempt from price ceilings. Occasional sales of them are expected to be made by the Government, and price control is required to prevent exorbitant prices being bid for them, OPA said. The motors will be subject to a ceiling of 75% of the cost of the same or equivalent motor when new.

2. On Government sales of primary chromium chemicals, dry batteries, and wire, cable and cable accessories, the ceilings in regulations governing sales of these items by other sellers will apply. The three regulations providing these ceilings are Maximum Price Regulation 575 (Primary Chromium Chemicals), Maximum Price Regulation 576 (Dry Batteries), and Revised Price Schedule 82 (Wire, Cable, and Cable Accessories).

### Ralph Camien Wins Army Promotion

CHINESE COMBAT COMMAND, U. S. ARMY—Major Ralph R. Camien, formerly active in the refrigeration and air conditioning industry in Wichita, Kan., was recently promoted from captain, announced Major General R. B. McClure, commanding general of the Chinese Combat Command.

In civilian life Major Camien had worked for the Shelley Electric Co. of Wichita, handling household and commercial refrigeration and air conditioning installation and maintenance, as well as radio service.

Major Camien had been a member of the National Guard since 1926 and has been overseas since May, 1944. He was serving in the military training branch of the office of the Chief Signal Officer, Washington, D. C., when ordered to India. For the past several months he has served as signal officer of an American liaison group in China training Chinese signal troops.

### Winslow Leaves Post At Libby-Owens

TOLEDO — Ralph Winslow has resigned as director of public relations for Libby-Owens-Ford Glass Co., a post he has held for four years, the company announced recently. He will become advertising manager of the Koppers Co.

No successor to Mr. Winslow has been appointed. G. P. MacNichol, Jr., vice president of the glass company, said. Libby-Owens-Ford advertising matters are now under Franklyn Hawkins, advertising manager.

### James Larkin Heads Brown U. Engineers

NEW YORK CITY—James Larkin, New York district sales manager of Century Electric Co. and a former chairman of the New York Section, American Society of Refrigerating Engineers, has been elected president of the Brown Engineering Association of Brown University, Providence, R. I.

### J. S. Kahn Is Dead

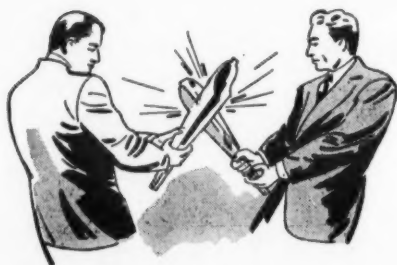
NEW YORK CITY — Jacob S. Kahn, president of the Refrigeration Maintenance Co., died recently at Mount Sinai Hospital after a brief illness.

### Marc Shantz Now In New Location

CHICAGO—Marc A. Shantz, representative of the Tecumseh Products Co. of Tecumseh, Mich., has moved his offices to 308 W. Washington Blvd. here.

## PROTECTION, BEAUTY and FASTER FINISHING SPEEDS

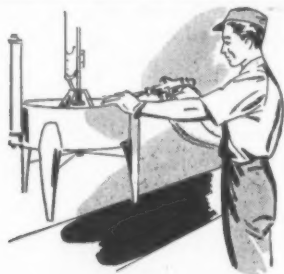
### How a Polymerin Finish Gives You All Three!



**PROTECTION!** Impartial tests have proved Polymerin\* 9 times harder to chip than ordinary enamels. Polymerin resists marring, humidity, heat, grease and other common deteriorants.



**BEAUTY!** A Polymerin finish adds to your product's "eye appeal". Polymerin is formulated in a full line of lasting colors, non-yellowing white and clear.



**FINISHING SPEED!** Polymerin is the original speed-bake finish. Baking speeds as low as 1 or 2 minutes help you to maintain fast production schedules and cut finishing costs.

### "THE FACTS ON POLYMERIN"

"The Facts On Polymerin" gives, industry by industry, many examples of *how* and *why* Polymerin has been used by leading manufacturers. You will want this information before you plan the finish for your postwar products. Use the coupon below to send for a free copy of "The Facts On Polymerin" today. Regular Polymerin is not available now. But Polymerin-200, a new finish that can be handled exactly the same as regular Polymerin and which is comparable in flow, flexibility, durability and lustre, is giving very satisfactory results in many applications.

### Ault & Wiborg

Division of Interchemical Corp., 350, Fifth Ave., New York 1, N. Y.

Please send, without obligation, a copy of "The Facts On Polymerin"—the booklet which gives, industry by industry, many examples of *how* and *why* Polymerin has been used by leading manufacturers.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

I am primarily interested in finishes for

☐ Current Use

☐ Postwar Use

## A & W POLYMERIN

The Original Speed-Bake Finish

AULT & WIBORG

DIVISION OF INTERCHEMICAL CORPORATION

\*Reg. U. S. Pat. Off.

## WEBERfirst

### IN PEACE...WAR...POST-WAR

Commercial Refrigeration,  
Soda Fountains, Ice Cream  
and Frosted Food Cabinets

Investigate the country's  
most complete line of  
commercial refrigerators,  
soda fountains and ice cream  
and frosted food cabinets  
before you make any post-war  
sales plans.

PLAN NOW TO SELL  
THE WEBER LINE INSTEAD  
OF SELLING AGAINST IT  
Write today for data concerning the details of Weber distributorships. This franchise will make real money for those concerns who can qualify.

## WEBER SHOWCASE & FIXTURE CO. INC.

5700 AVALON BOULEVARD • LOS ANGELES, CALIFORNIA



The Chicago Area: strategically located... compact... fortified against reconversion problems... big enough to buy all many a factory can make.

## Now-

### THE QUICK DISTRIBUTION

### AND VOLUME SALES

### YOU WANT

You can get going fast in the \$4,496,734,000 Chicago market. Here is a tremendous pent-up demand for autos, washing machines, refrigerators, "big unit" products generally. Here is a market fortified by diversified income and billions in savings—a market famous for its responsiveness to advertising and its record-breaking volume buying.

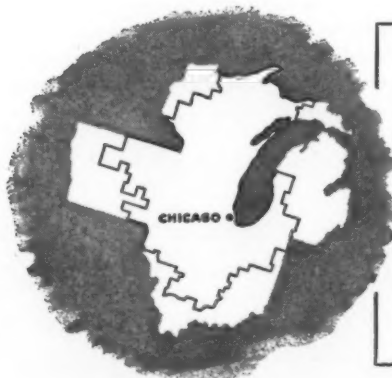
In this compact, easily accessible market, defined by consumer habit and merchandising practice, there is enough business to take the entire output of some manufacturers. You can get immediate volume and build solidly for a continuing, profitable operation. You can do it at one low cost through a single advertising medium—the Chicago Tribune.

Bought, read and bought from as is no other medium in this market, the Tribune is a powerhouse among dealers and con-

sumers. Seven days a week it hits with a selling impact that gets action. One out of every three families in 756 cities and towns of 1000 or more population in this market reads the Tribune on weekdays. On Sundays, it is practically every other family—at one of the lowest milline rates in the United States.

You can use monoroto, coloroto, comicolor, newsprint color or black and white—whichever you prefer as the most effective way to tell your story and to put over your name and product. Only the Tribune gives you this choice.

No matter whether you are ready now for heavy-duty selling or are just in the preliminaries of your sales planning, get the market facts and merchandising suggestions which a Tribune representative will gladly supply. Call him.



Now available for your study and use are the findings of a market-wide dealer and consumer investigation revealing ownership of automobiles and electrical appliances, brand preferences and expected purchases. To get these facts, address C. S. Benham, Manager, National Advertising, Chicago Tribune, Tribune Tower, Chicago 11, Ill.

## Chicago Tribune

THE WORLD'S GREATEST NEWSPAPER

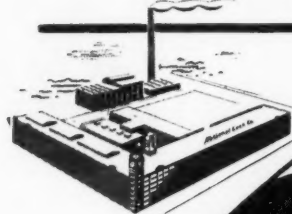
February average net paid total circulation: Daily, over 950,000  
Sunday, over 1,300,000



# Headquarters

## REFRIGERATOR HARDWARE for domestic, commercial and low temperature cabinets

Standard and custom built designs. If you are a manufacturer or jobber, write for our new Refrigerator Hardware Catalog No. R-88.



**SURFACE TYPE  
HARDWARE**

**"THRU THE DOOR"  
HARDWARE**

**EDGE MOUNTED HARDWARE**

**PLASTICS**

**DIE CASTING**



**NATIONAL LOCK COMPANY**

Refrigerator Hardware Division  
ROCKFORD, ILLINOIS

## Army Button Production Aided by Conditioning

SYRACUSE, N. Y.—Plastic olive drab buttons for clothing of men and women in the armed forces are now being made with fewer rejects, savings in strategic materials, and less production difficulties in conditioned air.

Machine-made from a fine powder, production delays were encountered on humid days, when the moisture in the air caused the powder to stick to the sides of the molds causing waste and production delay. Air pockets also formed, resulting in a higher number of rejects.

Carrier Corp. engineers studied the problem and an air conditioning system was installed which eliminated the difficulty. Now the production of buttons is independent of the weather, and production schedules are maintained.

## Crosley Distributor For Mexican Area Named

CINCINNATI—John W. DeLind, Jr., director of exports, the Crosley Corp., has announced the appointment of Importadora del Norte, S. A., as co-distributor for Crosley refrigeration products in Monterrey, Mexico, and adjacent territory.

Importadora del Norte, S. A., is now setting up a modern merchandising organization for the distribution of Crosley products in areas tributary to Monterrey, and the company's executives are studying American methods of merchandising and distributing.

## Where Air Conditioning Is Needed Outdoors



Somewhat resembling a giant caterpillar, the act duct of a portable Carrier air conditioning unit enters the bomb-bay doors of a B-24 bomber, carrying cool, dehumidified air to workers inside. Final work on the big planes at the Texas plant of North American Aviation is done on outside ramps, where the summer sun makes the metal interiors unbearably hot. The air conditioning units permit continuous work under comfortable conditions.

## Air Conditioning Proves Essential In Outdoor Assembly of Combat Aircraft

DALLAS, Tex.—A new and unusual application of portable air conditioning has solved a plane production headache and is now speeding up the flow of fighters and bombers to the fighting fronts from the Texas plant of North American Aviation.

To make way for more planes on the assembly lines, those nearly completed are rolled to outdoor ramps where final gadgets are installed. But the hot Texas sun, beating down on the metal bodies, made the interiors like ovens in summer, with noon temperatures hitting as high as 140° F. in nose and tail sections of B-24 Liberators. Under these conditions, mechanics could work only short shifts.

Carrier Corp. engineers were asked to study the problem and came up with the answer—portable air conditioning units. Subsequently, North American engineers devised an ingenious means of making the units mobile as well as portable; and at the same time preventing damage to the equipment. They salvaged a number of obsolete metal lunch carts and reworked them to accommodate the Carrier units and all accompanying paraphernalia.

Air ducts from the refrigerating units are now fed into the planes through bomb bay or cockpit, and a continuous flow of cool air permits the mechanics to work inside in comfort, until the job is finished.

## 'Heat Pump' and 'Reverse Cycle' Terms Lack Sales Appeal To Public, Kniffin Says

BALTIMORE—Use of the terms "heat pump" and "reverse cycle" to describe heating by refrigeration equipment is confusing to the public and lacks sales appeal, declared Claude W. Kniffin, air conditioning application engineer for Westinghouse Electric Elevator Co., in a talk before a meeting of the Baltimore-Washington (D. C.) Section, American Society of Refrigerating Engineers.

Discussing "Heating and Cooling by Refrigeration," Mr. Kniffin explained that the overall coefficient of performance for existing installations of "heat pumps" is on the basis of approximately three to five times more heat obtaining from the system than is supplied to operate it, although it varies among different systems.

In normal practice where electrical energy is produced by the combustion of coal, it is possible to deliver more heat than existed in the original fuel, he said.

Of the two general types of heat pump systems—using water or air as the source of heat—water systems have wider geographic applications because of the higher level of the heat source and a smaller reduction in efficiency under maximum heating requirements, according to Mr. Kniffin.

While present design permits reversing either the refrigerant flow or the fluid used as heat source, it is less complicated to reverse the flow of the heat source liquid, he contends.

Because heating by refrigeration provides excellent thermal efficiency there should be an increasing number of installations after the war, particularly since such efficiency will permit conservation of the country's natural resources, said Mr. Kniffin.

## BEER EQUIPMENT DISTRIBUTORS WANTED

The Taylor Precision Manufacturing Company is now prepared to negotiate distributor franchises for the sale and service of its complete line of draft beer dispensing systems.

This equipment includes the famous Taylor Beer Control System, complete with re-carbonating chamber and double action faucet; which units may be installed in present beer systems.

The "Frigid-Flu" electrically refrigerated package is a most recent development—and incorporates all that is new in a complete beer dispensing system—including compressors, controls, a water faucet, a carbonated water faucet, and three Taylor Beer Control Systems.

Additional details will be furnished to interested distributors.

**TAYLOR PRECISION MFG. COMPANY**  
1299 Parsons Ct., Rocky River 16, Ohio

## CHECK LIST

Look for these EXTRA VALUES

	Look for these EXTRA VALUES	EMERSON-ELECTRIC MOTORS	
1	RELIABILITY... Time-tested	54 Years	OK
2	COMPLETE LINE... Sizes 1/200th to 5 H.P.	For All Appliances	✓
3	ENGINEERING SERVICE... Design—Development	Complete Cooperation with Manufacturer	✓
4	TRADE ACCEPTANCE... Sales value in name	Long Established	✓
5	NATIONAL ADVERTISING... Consumer Acceptance	Extensive	✓

## How to find extra values in ELECTRIC MOTORS

Many motors look alike, but there the similarity ends! The real difference is in the extra values that are so vital to the reputation of your product.

Tabulated above are five highly important background values to consider. It will pay you well to investigate them carefully—because, no matter how good your product may be, it is finally no better than the motor that drives it.

**RELIABILITY**—Time-tested . . . An important factor is this 54-year time-tested reputation for building motors for virtually all types of domestic and commercial appliances.

**INVESTIGATE** the extra values back of Emerson-Electric Motors. Give your products this extra sales value.

**THE EMERSON ELECTRIC MANUFACTURING CO. • ST. LOUIS 3, MO.**  
Branches: New York • Chicago • Detroit • Los Angeles • Davenport

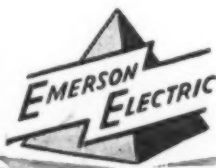


Standard Emerson-Electric Split-phase Motor with resilient mounting. Also supplied with rigid mounting.



Thirty-seven years ago, 1908. A new day in home heating. An Emerson-Electric motor-driven blower is attached to a warm air furnace.

**EMERSON**  
MOTORS • FANS



**ELECTRIC**  
APPLIANCES



# Inside Dope

By George F. Taubeneck

(Concluded from Page 1, Column 1)

their employers' quota-setting methods. (No doubt there always will be!)

More important, however, is this survey's information on what sales executives are looking forward to planning on for their salesmen during the coming decade.

Industrial groups covered by this study represent manufacturers and processors in building material and paints, clothing and shoes, farm equipment and supplies, food products, hardware and home appliances and furnishings, machinery and office equipment, sporting goods, toiletries and drugs, and transportation equipment and supplies.

The experience of these companies in their prewar and present compensation plans is sufficiently widespread to be worth noting by nearly anybody.

Outlining and determination of the three major trends stated above is based upon the following percentage returns:

I. As to the pronounced trend toward the installation compensation plans embracing basic salary plus incentive bonuses, this idea obviously is one that has proved to be good business for both salesman and employer. Men working under controlled incentive plans marked up the highest earnings of any group in 1941, while men working for flat salaries had the lowest.

The average earnings per man under the salary-plus-expenses-plus-bonus plan was \$4,784. Under straight commission, \$4,615. Drawing account against a commission, \$4,065. Salary plus expenses, \$3,342.

By 1941, 83% of these companies were providing for some form of controlled incentive in their salesmen's compensation plans. Fifty-six per cent were paying salary plus expenses. Fifteen per cent were offering only straight commission, while 12% disbursed drawing accounts against a commission record.

Comparative percentages thus show a marked change in direction. Current corporate preparations indicate

that this trend will continue. Those companies now using straight commissions or flat salary plans evince the greatest interest in changing over to incentive plans after the war.

In this survey their interest in incentive compensation ideas was indicated most frequently in emphasizing bonus possibilities through profit factors, new accounts, and expense economy (specific breakdowns on what they mean by those terms will be offered here in just a minute).

II. Ideas related to schemes for basing a salesman's total income upon an accurate analysis of the job he is doing are being given a correspondingly wide acceptance. Fifty-eight per cent of the sales executives surveyed expressed themselves as being in favor of a criterion of this sort.

Twenty-seven per cent, on the other hand, believed a salesman should be judged by how much he can earn as determined by how much business he brings in. Only 11% thought salesmen should be paid the minimum "going rate" figure for which an employer might hire salesmen during a period of relative unemployment.

When a specific salary is an integral feature of the compensation plan, the majority of firms surveyed thought the amount of the salary should be based on an estimate of what the salesman is worth when he does his job with reasonable satisfaction—considering the factors of territorial difficulty, consumer acceptance, experience called for, and any special qualifications that might be entailed.

Additional incentive payments through bonus checks should compensate for activity over and above such reasonable performance. Sixty-one per cent of the companies thought that the salesman's job evaluation should be determined on this basis. Twenty-five per cent set up "reasonable family living expenses" as the minimum salary line. Fourteen per cent indicated that 75% of a salesman's estimated yearly earnings should be established as the salary level for each man.

That matter of activity over and above reasonable performance actually covers a lot of detail. The general overall survey figure directs attention to the fact that only 12% of these questioned sales executives believe that sales volume alone should provide the entire measure of a bonus.

## Stability of Earnings

Nine sales executives out of 10 believe that violent fluctuations in salesmen's yearly earnings do not represent sound sales management policy. Changes from an income of less than \$5,000 in an ordinary year to figures between \$10,000 and \$15,000 in boom years, for example, too often make men less dependable, less hard-hitting when the going gets tough. And in boom years commission-salesmen can acquire extravagant habits!

One firm in the home furnishings field, which normally maintains a staff of 10 salesmen, made the comment, in speaking of violent fluctuations in salesmen's earnings: "Very objectionable to us—they lead to extravagance, require more home office interference in personal affairs, breed discontent and grumbling, and eventually a costly turnover in help."

## Market Analyses

III. The use of market analyses in working out sales policies and in establishing sales quotas has gained ground rapidly in the last 10 years.

But market analyses alone are not the answer, the returns indicated. Thirty-seven per cent of the surveyed group paid for expensive, expert market analyses in establishing their quotas in the field, but more than half of them also used their own past

records and their own executive's judgment of local market conditions as modifying factors (see Bill Switzer's comprehensive article on the use of market analyses in the Oct. 23 and Nov. 6, 1944, issues of the NEWS. He is manager of Frigidaire's market research and organization department).

Sixty-seven per cent of the respondents expressed the belief that the amount of a bonus should be tied up directly with performance against a definitely established sales quota for each territory.

This question—whether or not the amount of the bonus should depend upon performance quotas within territories outlined by the company—is still a controversial issue in many companies.

The "No's" insist that, no matter how scientifically any sales quota is worked out, it can never be a perfect measure of performance. A quota may give a salesman too wide a margin for legitimate griping, they believe. And every increase in his quota, no matter how good the reason for the enlargement, is looked upon suspiciously by the salesman as an attempt to shave his earnings.

The "Yes's" believe that a direct tie-up between salesmen and sales volume is the only plan which provides solid incentive toward maximum volume. A thoroughly competent market analysis, worked out with the salesman himself, may not be perfect—but it will be fair and accurate far beyond the point of simple guesswork, they point out. If you can't stand back of your own quotas, these men insist, it is only because your market analysis experts and your own knowledge of the market aren't up to par.

## \$35,000 STOCK OF COMMERCIAL REFRIGERATION SERVICE PARTS FOR SALE

At a fraction of original cost; Consists of expansion valves, all types; Controls, Seals, Compressor parts, rubber belts, fittings, motor brushes, bearings and hundreds of other parts, never used; all new; no detailed inventory list available. Must be seen to appreciate value. Reason for disposal: We have discontinued refrigeration service parts business; now exclusively in war production. Deferred payments accepted if entire stock is purchased. REFRIGERATION CORP. OF AMERICA 241 W. 64, N.Y. 23. End 2-4100, Mr. Wise.

EASY-TO-USE BARGAINS  
ACCURATE! UP-TO-DATE  
COMPLETE! GOOD LINES!  
ETC. BUYING GUIDE!  
BIG PRINT WHOLESALE  
EASY-TO-USE PRICES, ETC.  
QUANTITY DISCOUNTS  
ETC.

**AIRO** CATALOG

**DREAM COME TRUE!**

Here it is—the kind of a refrigeration tools, parts, and equipment catalog you've always wanted. Put out by AIRO, of course. Write for yours today sure!

**AIRO SUPPLY CO. (NOT INC.)**  
WHOLESALE ONLY  
2732 N. Ashland Ave., Dept. 8  
Chicago 14, Illinois

# ANSUL



## ST IN REFRIGERANTS

Ansul was first in America to produce Sulfur Dioxide for refrigeration (1915).

At the demand of the growing fractional-tonnage household refrigeration industry, Ansul began production of Methyl Chloride.

Ansul still analyzes individually every cylinder before it is shipped because—

The purity, dryness, and safety of handling of Ansul refrigerants are still top standards of a high-specification industry which Ansul is proud to have pioneered.



\*REG. U. S. PAT. OFF.

### ANSUL CHEMICAL COMPANY

"NOW IN OUR 30TH YEAR"

MARINETTE, WISCONSIN

AGENTS FOR KINETIC'S "FREON-11," "FREON-12" AND "FREON-22"

**THEY SAW WHAT THEY WANTED**

**ICE-O-MATIC MARATHON**

NO GAS ADDED NO OIL ADDED  
NO ADJUSTMENT OF ANY KIND  
Just run 24 hours Daily

**HOWDY -**  
I've been on the  
job every minute.  
Have You?

FIRST TO CATCH THE EYE of Uncle Sam's visiting war technicians was this Ice-O-Matic Marathon Unit... now approaching its 18th year of continuous operation. In its performance they saw what they wanted—the dependable mass-precision manufacturing skill for which Williams has always been noted. That's why Ice-O-Matic's facilities are still devoted to war production. But as soon as conditions permit, these facilities, expanded and even more skilled, will produce refrigeration units in 1/2 to 3 h.p. capacities for all temperature requirements. Meanwhile, we invite inquiries from manufacturers of commercial refrigeration equipment, freezing lockers, truck refrigeration and industrial cooling devices.

**WILLIAMS ICE-O-MATIC REFRIGERATION**

**WILLIAMS OIL-O-MATIC HEATING CORPORATION • BLOOMINGTON, ILLINOIS**



## WANTED—By a Centrally Located Electric Light and Power Company

Men to fill postwar positions in our Sales Organization.

We need:

**Assistants to Division Sales Managers**

**Supervisors**

**Plus Several Top Notch Salesmen,**

**Including Men Who Can Specialize in Selling:**

**Commercial Cooking      Air Conditioning  
Industrial Heating**

Age limit 25 to 40. College training desirable. In first letter give complete information about training, experience, names of former employers, how long employed by each, who to write for reference, age, number of dependents, salary expected, how soon available. Send picture. Box 1699, Air Conditioning & Refrigeration News.

One of the largest exclusive refrigeration  
stocks in America

Orders shipped same day as received

**T. W. BINDER CO.**

29½ So. Orange Ave.

NEWARK 3, N. J. - Mitchell 2-5346



SUNROC is putting the finishing touches to its nationwide sales set-up. Top-flight distributors have been assigned their territories... and these distributors, for the most part, have assigned their dealer-franchises.

The widespread demand for water coolers... Sunroc's well established reputation... make a Sunroc dealership a most attractive proposition for post-war profits. Those who have joined-up with Sunroc were strongly influenced by Sunroc's enviable and unbroken record of over 8 years of Federal acceptance. Since October, 1936, Sunroc has been sole contractor for all types and sizes of electric water coolers bought by the U. S. Government, from the General Schedule of Supplies.

Those enterprising business men who have signed-up with Sunroc are enthusiastic about the sensationally

advanced Sunroc line for post-war... the sound advertising, promotional, and merchandising program which backs them every step of the way... Sunroc's field sales and service cooperation.

Sunroc Water Coolers are the sole, highly-specialized product of a manufacturer who built well upon a foundation of Quality... who is making his bid for the post-war market upon a platform of Quality... and who consequently insists on Quality in his sales organization.

If you feel that you are qualified to join this hard-hitting, aggressive Sunroc team... and recognize the unparalleled opportunities which Sunroc offers... write to us, giving full details. We will have our regional distributor contact you, and inform you as to territory available. Sunroc Refrigeration Company, Glen Riddle, Pa.

"There's nothing like a cool drink of water"

# SUNROC

Water Coolers

GLEN RIDDLE, PA.

SUNROC REFRIGERATION COMPANY  
Glen Riddle, Pa.

Gentlemen:  
Please send full particulars on the Sunroc Water Cooler franchise, and your story of "One Product, One Price, One Policy."

Name \_\_\_\_\_  
Street \_\_\_\_\_  
City and State \_\_\_\_\_  
I am now \_\_\_\_\_  
I am not \_\_\_\_\_

AGENTS

## Off the Chest

### CHART CALLED UNFAIR TO ABSORPTION SYSTEMS

Servel, Inc.

513-514 Union Trust Bldg.  
Washington (5) D. C.

Editor:

In the NEWS of March 26 there was an article well done and very interestingly written by Lt. Don Dickinson and Technical Sergeant Allen C. Rivers. I was a little surprised, however, that in making up the chart which accompanied that article, there was a grouping of complaints on absorption systems and a breakdown of complaints on condensing systems that give a very untrue comparison to that person who would only look at the chart and not read the article.

The authors point out that there is the problem of cleaning the flues, adjusting and leveling, replacing wicks, etc., in these kerosene burning absorption type household refrigerators. These are all grouped, with the result that the bar identifying absorption complaints is the longest one on the chart.

If they had grouped the bar covering compressors, expansion valves, solenoid valves, manual valves, belts, and electric motors to form one bar, it would have exceeded in length the bar on absorption systems.

I think I am justified in expressing regret that the complaints on absorption systems were not broken down, because I am sure it was not the

intention of the authors to draw such an unfair comparison as would be indicated by simply studying the charts.

Obviously there is nothing that can be done about this, and I am writing you primarily to indicate the importance which I place on your paper and its effect on the industry, and to urge that you continue to view these articles with the idea of eliminating any unintentional unfairness in comparisons.

GEORGE S. JONES, JR.,

Vice President in Charge of Sales

Answer: See below.

### —ANOTHER ANALYSIS OF COMPLAINT CHART

Hales-Mullaly Co.

1-7 North East Sixth St.  
Oklahoma City (4) Okla.

Editor:

The reliability and authenticity of AIR CONDITIONING & REFRIGERATION NEWS has been unquestioned in the refrigeration industry for these many years past, and it is with extreme regret that my attention is forcibly called to the very obvious sabotage and odious reflections cast on "absorption systems" in the chart that appears on page 20 of the March 26 issue of the NEWS.

The immediate conclusion, after a quick glance at the chart, would be that the "absorption systems" provide a service and operating hazard far in excess of "compressor type" refrigeration.

Though a careful analysis of the chart discloses that of the 2,250 service calls on which the chart was based, 8.7% of these service calls were occasioned by conditions common to both the "compressor type" and "absorption systems" and further, that 69.56% were occasioned by conditions exclusively peculiar to the compressor type and only 21.74% were conditions peculiarly exclusive to the absorption systems.

I am reluctant to believe that this chart was designed to treat the absorption systems unfairly, as evidenced by the fact that in the article accompanying the chart there is brief reference to some of the circumstances that contributed to the service required on the absorption type system.

However, it has been my experience, both personally and by observation, that few people read that far in this type of article, and that even if they did, those who have an ulterior motive would completely disregard the text and rely solely on the chart to prove their alibi.

HARRY CANUP, Sales Manager

Answer: The chart was prepared by the authors of the article, not by the editors. We don't believe that it was their intent to be unfair to absorption-type systems. Rather, since their experience with absorption-type systems was rather limited, as pointed out in the article, they chose

to lump all the complaints under one heading.

However, the result did contain an element of unfairness, and we appreciate your calling our attention to it.

### FIRM SEEKS LINE FOR STATE OF WASHINGTON

Distributors, Inc.

2118 Fourth Ave.

Seattle (1), Wash.

Editor:

We are interested in securing an electric refrigeration line for this territory for the postwar period.

We are set up to handle the state of Washington from Aberdeen on the West to Chehalis on the South, North to the Border, and East to Wenatchee, Yakima, and Pasco. If it is necessary that we do so to secure a franchise, we would be able to open branch offices in Portland, Ore., and Spokane, Wash. We also have connection with a man who covers the territory of Alaska and so could handle distribution of the product in that territory.

We appreciate the fact that you are a busy man but we also realize that you are so deep in the refrigeration picture that you, no doubt, have information on new concerns entering the business, or on old concerns wishing to make changes before the general public.

We would appreciate your sending us any information that you might have available pertaining to this territory or giving our name to any manufacturing concern who is interested in securing a distributor for the Pacific Northwest.

We would like to have you feel free to check our financial status either with Dun & Bradstreet in their February book, with Frank Jerome of the Seattle First National Bank, or with John Murphy of the Refrigerator Discount Corp. of Portland, Ore.

B. B. PIERCE, JR.,  
Vice President

### MEN ON SAIPAN GET READY FOR POSTWAR

1706 23rd St.  
Galveston, Tex.

Editor:

Please renew my son's subscription to the AIR CONDITIONING & REFRIGERATION NEWS. Enclosed find money order for \$4.

I might add that my son, who is with a refrigeration unit on Saipan, looks forward to each issue of your fine publication, and all the boys in his outfit pass it around to each other.

It's a sign that our boys are keeping abreast of the times and will be prepared to do the big job in air conditioning and refrigeration that will have to be done after Germany and Japan bite the dust. So don't think you're not appreciated. Keep up the good work.

Yours truly,  
W. J. MADONEN

**amano**

## HOME FREEZERS

### THE COMPLETE LINE

With Amana you are READY to cash in on a GREAT NEW APPLIANCE MARKET. The three modern AMANA FREEZERS fit the needs and pocketbooks of ALL USERS. GET FACTS on AMANA. It's a good name to be associated with. Write or wire.

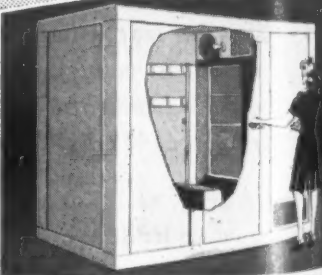
Refrigeration Division

**AMANA SOCIETY**  
AMANA, IOWA

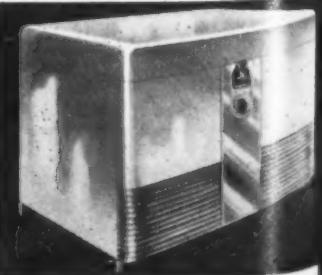


**Model 50**  
5 CU. FT. CABINET.  
Accessible... convenient... counter-balanced lid. No waste space.

**Model 90**  
9 CU. FT. CABINET.  
Full view, counter-balanced top. Contents easily accessible. 100% usability of storage space.

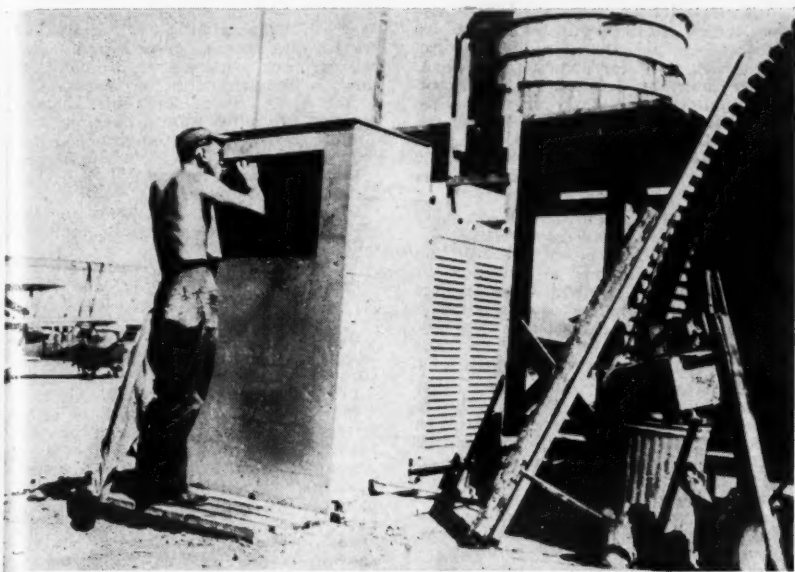


**Model 200 Freezer - Cooler**  
A complete private locker plant. 23 cu. ft. sharp freezing capacity. 120 cu. ft. Cooler.





# Refrigeration Scores Again In Pacific



Cool drinking water makes life a lot pleasanter on this South Pacific base. Seebees adapted a Carrier refrigeration unit to cool water running from the hand-filled storage tank seen at top right of photograph.

## Seebees Convert Big Unit To Cool Drinking Water

A SOUTH PACIFIC BASE—A frigid reception is generally the end of a friendship, but it works just the other way around on a number of South Pacific islands where Army and Navy forces are stationed.

There the former sharp rivalry between Navy Seebees and Army troops has mellowed into beautiful friendship, ever since the ingenious Seebees found a way to obtain a continuous supply of cold drinking water, which formerly couldn't be purchased with all the gold at Fort Knox.

Concentrating on the cold water problem, men of a Naval Construction Battalion obtained permission to use a portable Carrier refrigeration unit, one of several supplied to the outfit for refrigerating food. It was up to them to solve the problem of a running water supply.

This was done by constructing a circular, wooden storage tank, which was placed on a raised platform about 12 feet from the ground, and filled by hand. From the tank water was fed through a pipe by gravity

to the refrigerating unit, and emerged from a tap ice cold.

The generous Seebees did not keep their treasure to themselves, but permitted the Army personnel to share it, although they did put up a sign "No Five Gallon Cans Filled."

The cold water proved to be excellent Jap bait. One night the Seabees found that several of the enemy had crawled through the lines to sample the ice water. It was their last drink.

## Refrigeration Supply Co. Formed In Billings, Mont.

BILLINGS, Mont. — Refrigeration Supply Co. has been established at 9 N. 25th St., Billings, as an exclusive refrigeration parts and supply jobbing house.

The new firm is owned by F. R. Pond, president of Refrigeration & Industrial Supply Co., Minneapolis parts jobbing firm, and will be under the management of George H. Bartlett, formerly of Bismarck, N. D.

Refrigeration Supply Co. will serve the entire state of Montana, the northern half of Wyoming, and the western half of North Dakota, Mr. Pond has announced.

## Prices Set on Freezer, Milk Cooler Lines

WASHINGTON, D. C.—Maximum prices have been established by OPA for the line of farm and home freezers to be produced by Emil Steinhurst & Sons, Inc., of Utica, N. Y., and a line of milk coolers introduced by the Erie Cooling Co. of Winona, Minn.

Prices on the Steinhurst units, to which freight and crating charges (up to \$6) may be added, and the Erie prices are shown in tables at right.

### STEINHURST HOME AND FARM FREEZERS

Item	Size	Sales to distributors	Sales to dealers	Sales to consumers
WM10	1/4-hp. condensing unit	\$215	\$258	\$430
WM18 1/2	1/2-hp. condensing unit	275	330	560
WM26	3/4-hp. condensing unit	360	420	700

### ERIE STANDARD MILK COOLERS

Model	Size	Sales to distributors	Sales to dealers	Sales to consumers
MC3E	1/4-hp. condensing unit	\$161.60	\$202.00	\$269.35
MC4B	1/4-hp. condensing unit	190.85	238.60	318.10
MC6B	1/2-hp. condensing unit	218.65	273.30	364.40
MC8A	1/2-hp. condensing unit	218.65	273.30	364.40
MC8A	3/4-hp. condensing unit	252.25	315.30	420.40
MC10A	1-hp. condensing unit	287.95	359.90	479.90

### ERIE HEAVY DUTY MILK COOLERS

MC3BH	1/4-hp. condensing unit	\$230.40	\$288.00	\$384.00
MC4BH	1/4-hp. condensing unit	244.80	306.00	408.00

## Ben McDougall Named Superior Representative

PITTSBURGH—Ben M. McDougall, 423 C & S National Bank Bldg., Atlanta, Ga., has made connections with Superior Valve & Fittings Co. as their representative in Tennessee, North Carolina, South Carolina, Georgia, Alabama, Mississippi, and Florida. Mr. McDougall also represents the Alco Valve Co.

After graduating with a B.S. degree in Engineering from Southwestern Louisiana Institute, he entered the refrigeration industry in 1940 as a manufacturer's agent for Alco Valve Co. and Marlo Coil Co. with headquarters in New Orleans. Later he moved to St. Louis and joined the Alco engineering department. A member of the A.S.R.E., he established his present headquarters at Atlanta in August, 1944.



## Local Branches

Manufacturers know that local branches are expensive. NRSJA members offer the advantages of branches without incurring the costs to the manufacturers they represent. Even more important, distribution costs drop to zero in slack periods, but distribution facilities are maintained. The jobber, not the manufacturer, assumes the risks. In 120 localities, NRSJA members stand ready to serve you with local stocks and services.

### NATIONAL REFRIGERATION SUPPLY JOBBERS ASSOCIATION

Dependable Distribution

Paramount Building - - Cincinnati, Ohio

*The PROMOTION behind*

# FREEZ-ALL HOME FREEZERS

**FREEZ-ALL LEADS THE NEW HOME FREEZER INDUSTRY**

**FREEZ-ALL**  
HOME FREEZERS

**FREEZ-ALL DIVISION**  
Portable Elevator Mfg. Co.  
Dept. T-8  
Bloomington, Ill.

**FREEZ-ALL**  
HOME FREEZERS

*Quiet Operation*

**AIR IMPELLERS**  
for every purpose

**THE TORRINGTON**  
MANUFACTURING COMPANY, TORRINGTON, CONN.



# Text of Amended M-28 Order Relaxing 'Freon-12' Restrictions

**Editor's Note:** In this publication of the revised M-28 order, the new and altered parts, and the notations of the deleted paragraphs are published in boldface type.

## PART 1226—GENERAL INDUSTRIAL EQUIPMENT (Conservation Order M-28, as Amended April 2, 1945)

### DICHLORODIFLUOROMETHANE

The fulfillment of requirements for the defense of the United States has created a shortage in the supply of dichlorodifluoromethane for defense, for private account, and for export; and the following order is deemed necessary and appropriate in the public interest and to promote the national defense.

§ 1226.27 Conservation Order M-28—  
(a) Definitions. For the purpose of this order:

(1) "F-12 gas" means dichlorodifluoromethane (sometimes called "Freon-12").

(2) "Person" means any individual, partnership, association, business trust, corporation, governmental corporation or agency, or any organized group of persons whether incorporated or not.

(3) "Producer" means any person engaged in the production of "F-12" gas.

(4) "Supplier" means any person to the extent that he is engaged in the business of distributing "F-12" gas to persons using the same for installation in refrigerating or air conditioning systems. The term shall include an equipment manufacturer to the extent that he engages in the sale of "F-12" gas which has not been installed in such systems. "System" means any "system" as defined in General Limitation Order L-38.

(5) "Equipment manufacturer" means any person to the extent that he uses "F-12" gas for charging new refrigerating or air conditioning systems or parts of systems manufactured by him. It does not include affiliates, subsidiaries, branches, divisions or sections, or an enterprise, if not actually engaged in the manufacture of systems or refrigerant

containing parts of systems.

(6) "Insecticide manufacturer" means any person to the extent that he uses "F-12" gas in the production of insecticide.

(7) "User" means any person who installs "F-12" gas in a refrigerating or air conditioning system, other than an equipment manufacturer. It includes suppliers, service agencies, owners, or lessees, to the extent that they engage in installing "F-12" gas in any system.

(8) "Contract agent" means any person to whom or for whose account "F-12" gas is delivered by a producer for distribution to suppliers.

(If the same person, or two or more branches, divisions, or sections of the same enterprise, acts in two or more capacities as contract agent, supplier, equipment manufacturer, or insecticide manufacturer, the particular provisions of this order which apply to the respective activities must be followed, to the extent to which the various provisions are applicable to each activity.)

(b) Deliveries for systems on List A. (1) "F-12" gas may be delivered and accepted for use in any new or used system of a type referred to in List A. However, precedence shall be given to orders for "F-12" gas for installation in systems not on List A over orders for systems on List A, by any service agency or other user who sells "F-12" gas to the owners or operators of systems (or installs it for them).

(2) [Revoked Jan. 29, 1945.]

(3) Attention is called to paragraph (c) (2), which prohibits a supplier from delivering "F-12" gas except on certified orders.

(c) Deliveries by suppliers. (1) No supplier or any other person (except a producer) shall deliver any "F-12" gas for export outside of the continental United

States, or for use by any of the following non-retail users (or to any shipyard or other person for use in a system to be delivered to any of them), namely: The Army, Navy, Maritime Commission, War Shipping Administration, post exchanges, ships service departments and activities, equipment and insecticide manufacturers, for new or used systems, or for use in insecticide, without specific authorization from the War Production Board.

No person shall accept from a supplier or other person any delivery of "F-12" gas which is prohibited by the restriction in this order.

(2) Whenever the owner of a system or any other user wishes to obtain "F-12" gas for installation in a system or systems, he may place his order for the minimum quantity which the available cylinder or cylinders permit, necessary to bring the charge in the system or systems up to a normal operating charge; and any person wishing to secure such gas for ultimate uses (such as testing coaxial cable for leaks) other than the charging of a system, may place his order for the minimum quantity which the available cylinder or cylinders permit, necessary to give him a practicable minimum working inventory or such other use. He must certify his order, or the vendor's delivery receipt, by a certificate endorsed on or attached to it, showing that the "F-12" gas is to be used for such purposes only, and that he is not holding any empty cylinders not owned by him, which shall be in substantially the following form:

"The undersigned purchaser certifies to the seller and the War Production Board that he does not have any 'F-12' gas cylinders not owned by him, which have been empty for more than 15 days; and that the 'F-12' gas covered by this order will not be used or resold for any purposes not permitted by Order M-28."

The standard certification in the form described in Priorities Regulation 7 cannot be used instead of that described above. Such certificate, which must be signed by the purchaser or his authorized official, will constitute a representation that what is stated in it is true. A supplier must not deliver any "F-12" gas except under certified orders; and he must not make delivery under any order which is certified if he knows, or has any reason to believe that the certificate furnished with such order is untrue, incomplete, or

inaccurate. In such a case the supplier must reject the order, and should explain why he is doing so, so that the prospective purchaser can comply with this order. Each supplier must keep all accepted orders and certificates which he receives, for a period of two years, for inspection by the War Production Board. Cylinders must be emptied and returned to the supplier as promptly as practicable (unless the cylinder is owned by the person buying the "F-12" gas). In general, this should be done in less than 30 days from the date the cylinder is received.

This restriction shall not prevent a person who serves several systems for which deliveries are permitted by this order from purchasing a cylinder of "F-12" gas from a supplier, if the amount purchased is the smallest quantity practicable considering the sizes of the standard commercial cylinders and the amount needed in his current operations.

(3) No "standby charge" or any other quantity of "F-12" gas, over and above that needed to bring the total charge in a system or systems up to the normal operating charge, shall be delivered to or accepted by any person for use in a system which he owns, leases, or operates (except the Army, Navy, Maritime Commission or War Shipping Administration); except, however, that a "standby charge" may be maintained for a system which is operated primarily for one of the following purposes: air conditioning or refrigeration for the production and storage of penicillin, or blood serum; or refrigeration for the storage of blood or plasma, or the production or storage of blood plasma.

(d) Deliveries by producers. Each producer shall hold his entire inventory of "F-12" gas, together with all additional quantities produced or otherwise obtained by him from time to time, for delivery for such uses as may be authorized or directed from time to time by the War Production Board. No deliveries of "F-12" gas shall be made by a producer except pursuant to specific authorizations or directions heretofore or hereafter issued by the War Production Board.

(e) The provisions of this order shall be followed by every producer, contract agent, supplier, user, equipment manufacturer, insecticide manufacturer, and any other person buying, selling, or delivering "F-12" gas, without any regard to any preference ratings which have been assigned or which may hereafter be assigned to particular contracts or orders.

(f) Miscellaneous provisions.—(1) Applicability of regulations. This order and all transactions affected thereby are subject to all applicable regulations of the War Production Board, as issued and amended from time to time.

(2) Reports. (i) Each equipment manufacturer who wishes to secure delivery of "F-12" gas during any month for charging systems or parts produced by him, or for factory repair and charging of sealed or hermetic condensing units, shall file with the War Production Board, on or before the 15th day of the preceding month, a report on Form WPB-3326, prepared in accordance with the instructions for such form.

(ii) [Deleted April 2, 1945.]

(3) Violations. Any person who willfully violates any provisions of this order, or who, in connection with this order, willfully conceals a material fact or furnishes false information to any department or agency of the United States is guilty of a crime, and upon conviction may be punished by fine or imprisonment. In addition, any such person may be prohibited from making or obtaining further deliveries of, or from processing or using, materials under priority control, and may be deprived of priorities assistance.

(4) Appeals. Any appeal from the provisions of this order, or any direction thereunder, shall be made by filing a letter in triplicate, referring to the particular provision appealed from and stating fully the grounds of the appeal.

(5) Communications. All reports to be filed and other communications concerning this order should be addressed to: War Production Board, General Industrial Equipment Division, Washington 25, D. C., Ref. M-28.

Issued this 2nd day of April, 1945.

WAR PRODUCTION BOARD,  
By J. JOSEPH WHELAN,  
Recording Secretary.

<sup>1</sup> The reporting requirements of this order have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

### LIST A

**Air conditioning systems.** Any system, of any size operated or installed for the purpose of lowering the temperature and/or humidity of air in any building, room, or other enclosure used as, or located in any of the following:

- Amusement parks.
- Animal hospitals.
- Auditoriums.
- Ballrooms, dancing studios, and dance halls.
- Bank and loan associations.
- Bars, cocktail lounges, and beer parlors.
- Bowling alleys.
- Concert halls.
- Funeral parlors.
- Golf clubs, country clubs, athletic clubs, and all other clubs and club houses.
- Hotels and apartment houses.
- Moving picture houses.
- Night clubs.
- Office buildings and offices, public or private.
- Railway, streetcar, and bus stations and terminals.
- Residential buildings and dwellings of all kinds.
- Restaurants, cafeterias, and other places selling meats, food, or beverages.
- Schools.
- Service establishments, such as laundries, cleaners and dyers, tailor shops, barber shops, "beauty" parlors, automobile sales and service shops, and repair shops of all kinds.
- Skating rinks.
- Stores, selling any kind of products, material or merchandise, at retail or wholesale (excluding manufacturing establishments).
- Studios of all kinds.
- Theaters.

This list does not include (i) any such system used primarily to air condition a building, room, or other enclosure used chiefly for purposes not listed above, or (ii) any system designed, necessary and used, in substantial part, for the refrigeration and storage or processing of food, ice, or other materials or products, necessary to life or health, or to be delivered to the Army, Navy, Maritime Commission, or War Shipping Administration, and requiring refrigeration temperature control, or freedom from dust or other impurities.

**Refrigeration systems.**  
Skating rink systems.  
Refrigeration systems solely for storing or dispensing carbonated or malt beverages.

INTERPRETATION 1  
INTERPRETATION 1: REVOKED  
NOVEMBER 12, 1943.

## PART 1226—GENERAL INDUSTRIAL EQUIPMENT (Conservation Order M-28, Interpretation 2 as amended April 2, 1945)

(a) Quantities which may be obtained by system owner. Subparagraphs (c) (2) permits the owner (or lessee) of a refrigerating or air conditioning system who does his own installation of "F-12" gas, to place his order for the minimum quantity "which the available cylinder or cylinders permit" necessary to bring the charge in his system up to a normal operating charge.

The standard commercial cylinders are generally available in sizes which contain four pounds, 10 pounds, 25 pounds, and 145 pounds of the gas, and a particular supplier may not have all four sizes in stock at all times. Questions will, therefore arise as to the number and sizes of cylinders which the owner of a system is permitted to obtain if the particular supplier with whom his purchase order is first placed should not happen to have the sizes of cylinder from which the minimum quantity needed by the system can be furnished the owner.

In such a case, the owner of the system should make a reasonable effort to obtain the minimum quantity which he needs, from some other supplier in his locality, rather than purchase an excessive quantity from the first supplier upon whom he calls. While the order does not prescribe rigid rules as to exactly what effort the purchaser should make in every case, it is required that he do whatever is practicable, under his particular conditions, to obtain the minimum quantity which he needs, and no more.

Where he is located in a large community in which there are a number of suppliers, he should contact several, if necessary in order to obtain the quantity needed. If he happens to be located in a small community where there is only one supplier who cannot furnish the exact quantity needed, and the "F-12" gas must be obtained immediately in order to avoid spoilage of a substantial quantity of food, the restriction would not prevent him from obtaining a larger amount, if that is unavoidable without letting his food spoil.

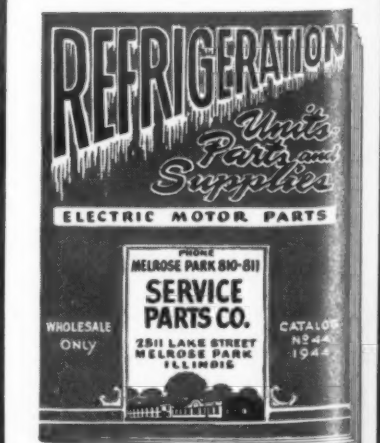
As a guide to the number and size of cylinders which should normally be obtained, for the different quantities of "F-12" gas which may be needed in different cases, the following table is furnished:

Pounds of "F-12" gas Required	Number of cylinders—			
	4 Lbs.	10 Lbs.	25 Lbs.	145 Lbs.
0-4	1	1	1	1
5-9	1	1	1	1
10-14	1	1	1	1
15-24	2 or	1	1	1
25-29	1	1	1	1
30-39	1	1	1	1
40-49	1	2	1	1
50-59	1	1	2	1
60-69	2	2	2	1
70-79	1	3	3	1
80-89	1	1	3	1
90-110	1	4	4	1
111-145	1	1	1	1
146-170	1	1	1	1
171-195	1	2	1	1
196-220	1	3	1	1
221-245	1	4	1	1
246-290	1	1	2	1
291-315	1	1	2	1
316-340	1	2	2	1
341-365	1	3	2	1
366-390	1	4	2	1
391-435	1	1	3	1

The above interpretation applies only where the system owner buys his "F-12" gas from the supplier, and installs it himself. If he has a service shop install the gas, the shop will always be able to furnish no more than the amount actually needed, from its service cylinders and there will be no problem.

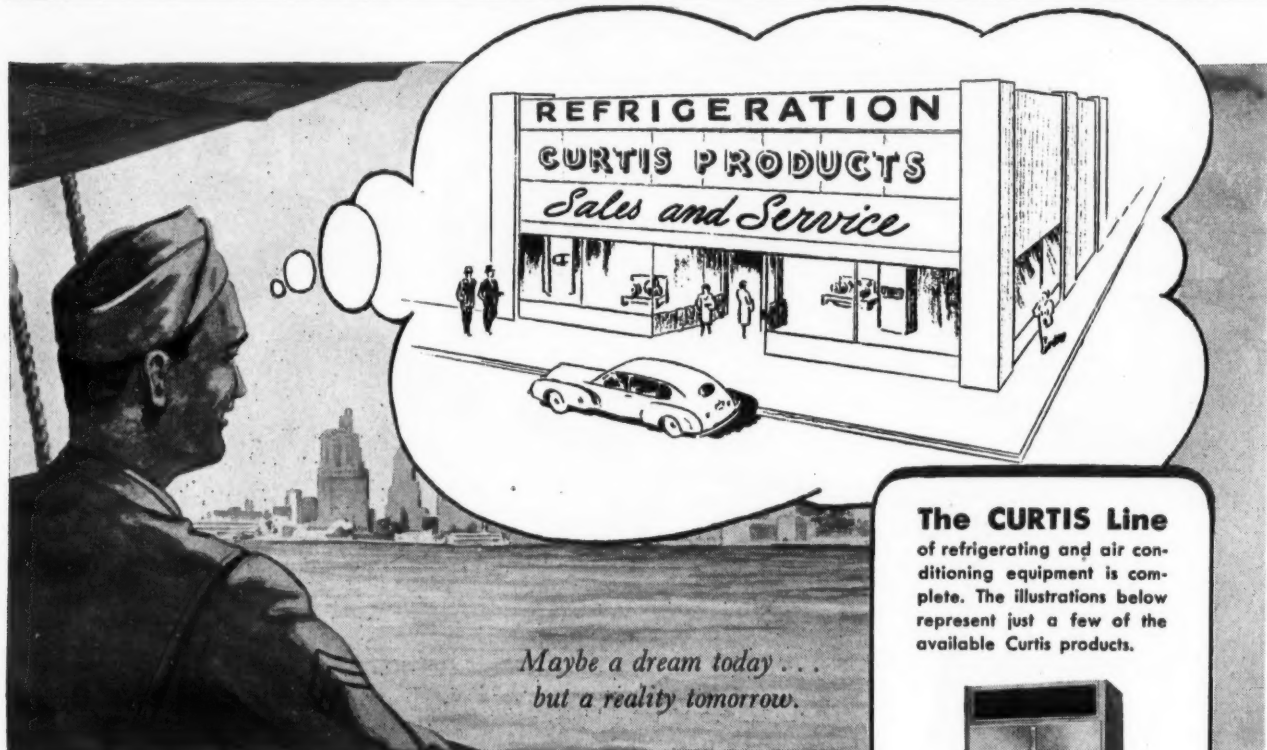
(b) [Revoked April 2, 1945.]  
Issued this 2nd day of April, 1945.  
WAR PRODUCTION BOARD,  
By J. JOSEPH WHELAN,  
Recording Secretary.

## WRITE FOR CATALOG



Due to the paper shortage we will not issue a catalog in 1945

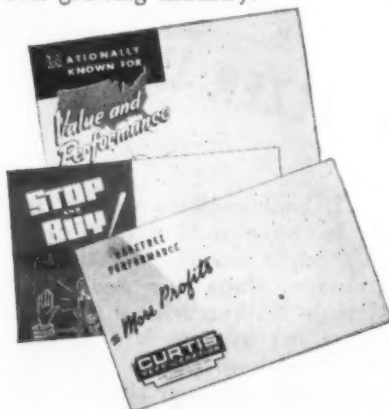
SERVICE PARTS CO.  
2511 Lake St. Melrose Park, Ill.



Maybe a dream today...  
but a reality tomorrow.

## CURTIS Refrigeration Equipment Offers You the Same Economical Dependability So Valuable to Our Armed Forces

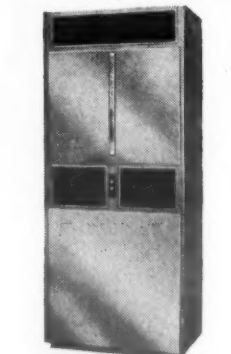
To thousands of our G. I. Joes and men in all branches of the service who have seen CURTIS equipment "deliver the goods"—to those who are thinking of that "after-the-war-job," or "that business of my own," no wiser steps can be taken than to put to good use the experience gained in the installation and maintenance of refrigeration and air conditioning equipment—by becoming actively engaged in the further development of this ever-growing industry.



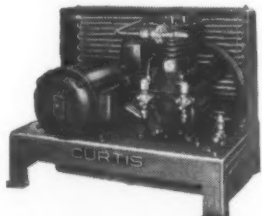
### Write for Complete Information

You will be interested in reading about the possibilities in the field of refrigeration and air conditioning. Why not write today for Bulletins C-58, C-68-C, and C-14-M, covering this interesting and profit-building business.

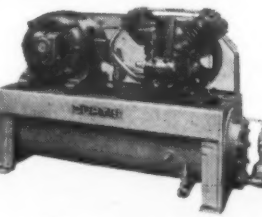
**The CURTIS Line**  
of refrigerating and air conditioning equipment is complete. The illustrations below represent just a few of the available Curtis products.



5-HP. Curtis Packaged Air Conditioner



1 1/2-HP. Curtis Condensing Unit



15-HP. Water-cooled, Shell and Tube Condensing Unit



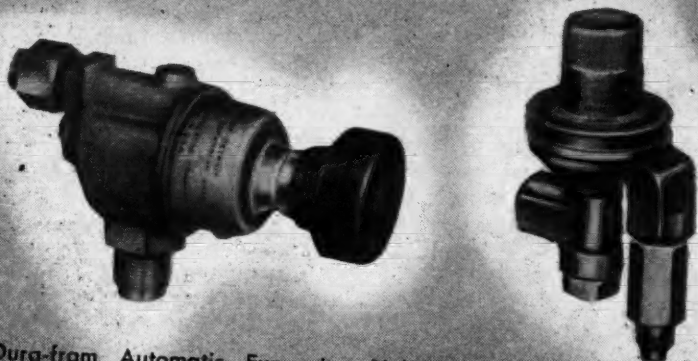
## CURTIS REFRIGERATING MACHINE DIVISION

of Curtis Manufacturing Company

1912 Kienlen Avenue, St. Louis 20, Missouri

FOR VICTORY BUY MORE U. S. WAR BONDS AND STAMPS





Dura-fram Automatic Expansion Valves are made in various capacities for domestic or other small boxes. Dura-fram diaphragms and Delubaloy needles and seats assure long trouble-free operation.

## "DETROIT" VALVES For Every REFRIGERATION NEED

There is a "Detroit" Expansion Valve of superior quality for every refrigeration need. Made better, they do the job better. Refrigeration men everywhere prefer "Detroit" Expansion Valves and "Detroit" Solenoid Valves.

## Drying

### A REFRIGERATION SYSTEM

#### No. 2 of a Series

Moisture is refrigeration system enemy No. 1. Just a few drops can freeze up the expansion valve and put the system out of operation. Sometimes a system will operate satisfactorily for weeks or months, and then have moisture trouble because moisture in the system finally worked out of other parts and into the expansion valve.

Hence, thorough drying of a refrigeration system is of first importance, and the service man can't take too many precautions to be sure that all moisture is eliminated.

An important factor in keeping a refrigeration system free of moisture is the manner in which equipment is handled when taking it to the job.

If the parts are not capped or sealed tightly they are likely to contain moisture when they are installed. Refrigeration parts often are carried in a cold service car or kept in a cool place, such as a basement. When a cold part is taken into a warm room for installation, and is not sealed, moisture will condense on and in that part because its temperature is lower than the dew point of the air.

Therefore, it is important that all parts be kept closed until they have warmed up to the temperature of the room in which they are to be installed.

Neither heat nor vacuum alone is sufficient. The oven temperature will be governed by the construction of the unit to be dried; and the greater the vacuum, the more completely dehydrated the system will be.

Whenever possible, a "package" system which shows evidence of moisture should be removed from the job and dried in the above manner. However, if conditions do not permit removal of the unit for baking, or if the system is one which has been assembled in the field, satisfactory drying may be accomplished by heat and vacuum if the proper equipment is available.

The equipment necessary for drying a system on the job, by the heat and vacuum method, consists of infra-red or heat lamps, and a portable vacuum pump capable of drawing a vacuum of 28 or 29 inches of mercury. The following procedure is recommended:

Connect the vacuum pump to the system and start it running. With the heat lamps, warm every part of the system simultaneously, including all the tubing, and keep them warm, with the pump operating continuously. The length of time necessary to completely dehydrate will depend upon the size of the system and the capacity of the vacuum pump.



Refrigeration tubing is invariably dried thoroughly, and the ends sealed before shipping. If unsealed while cold, moisture will condense inside. Warm it up before opening.

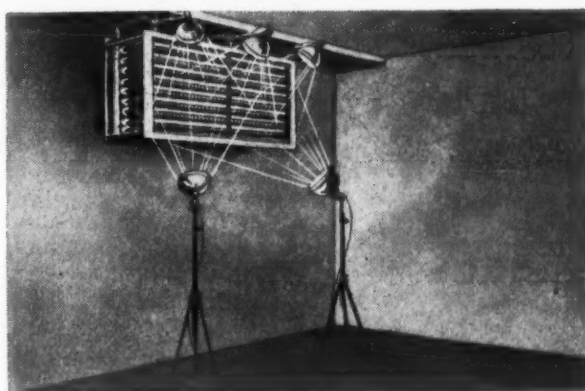
No part, whether it is new or one which has been dried and sealed, should ever be opened until it has had time to become thoroughly warm. After it has been opened it should be installed immediately.

There are several methods of drying a system. The first of these to be described is:

#### Method No. 1—Heat and Vacuum

"Package" type systems, which are shipped completely assembled and ready to operate, are generally dried by this method.

The complete unit is placed in a heated oven and connected to an efficient vacuum pump. The heat vaporizes the moisture from the inner walls of the tubing, compressor, valves, etc., and the vacuum pump draws this water vapor out of the system.



Plenty of heat as well as good vacuum is needed for drying. Use plenty of lamps so the whole system gets warm.

If all the tubing is not accessible for heating with the lamps or a torch, it should be removed from the system and either replaced with new dry tubing or thoroughly dried out and put back. New tubing will be more satisfactory in most cases.

In the case of a broken water-cooled condenser, where a large quantity of water has entered the system, all parts, including the tubing, should be removed and thoroughly dried in an oven. Here again, new tubing may be more practical.

Whenever any parts are removed from the system for drying in an oven, they should be capped or sealed as soon as they have cooled. If these parts are cold when they arrive at the job, they should be allowed to warm up to the temperature of the room in which they are to be installed before uncapping them.

This is No. 2 of a series of refrigeration service helps. In following issues we will deal with other methods of combating moisture trouble.



No. 899 New Dura-fram Thermostatic Expansion Valves for commercial installations. Furnished with external or internal equalizer and forged union connection.



No. 673 Thermostatic Expansion Valve. For many years the standard of the refrigeration industry.



No. 793 Differential Temperature Expansion Valve specially designed for temperatures below minus 30° F.

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DETROIT LUBRICATOR COMPANY Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION

# DETROIT LUBRICATOR COMPANY



General Offices: DETROIT 8, MICHIGAN

Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION

Canadian Representatives — RAILWAY AND ENGINEERING SPECIALTIES LIMITED, MONTREAL, TORONTO, WINNIPEG

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**Director**

ELIZABETH WOODY

**Name Director For G-E Consumers Institute**

(Concluded from Page 1)

the Institute's laboratories from the housewife's viewpoint, checking their findings in the homes of consumers with factory engineers to insure most satisfactory product performance and design.

Dr. Donald K. Tressler will continue as a consultant to the General Electric Co. on special problems in connection with food technology.

**Engineering Firm Formed In Kansas**

MCPHERSON, Kan. — The McPherson Electric Co., owned by E. W. Ek, and the Allen Refrigeration Service, owned by O. D. Allen, have merged to form a new organization to be called the McPherson Engineering Co.

The new company will handle lines of refrigeration, air conditioning, and heating equipment, and will operate a refrigeration repair shop and an electrical contracting business.

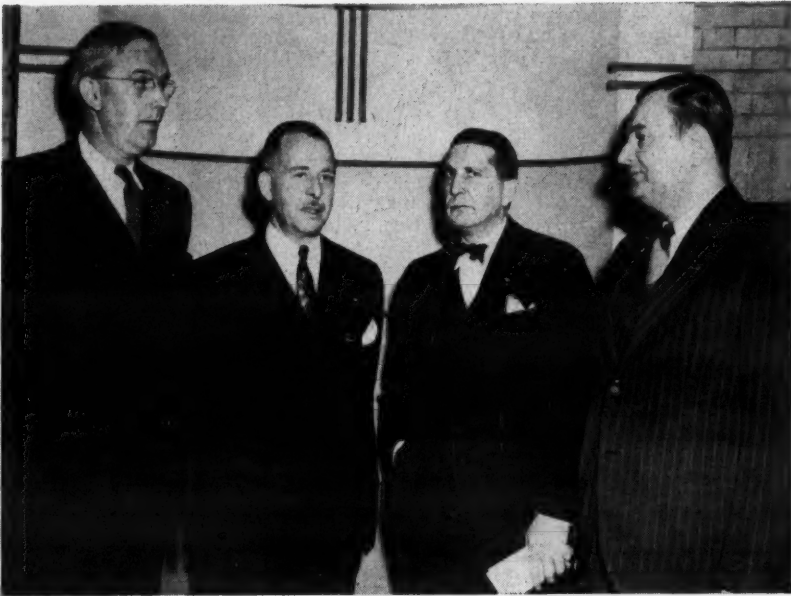
New headquarters and display rooms have been opened at 211 N. Main St., McPherson.

Mr. Ek has been in the heating and air conditioning business for the past 20 years. Mr. Allen has been an engineer in the refrigeration field for about the same length of time, and was a construction superintendent in charge of steam and refrigeration on one of the world's largest magnesium plants.

**Connor Engineering Corp. Issues Revised Catalog**

NEW YORK CITY — A completely revised catalog on its line of "kno-draft" adjustable ceiling air diffusers has been prepared by the W. B. Connor Engineering Corp. here.

Bound in loose-leaf form, the catalog includes bulletins, technical and performance data, installation, adjustment and testing instructions, and price lists.

**Indoor Climate Institute Enrolls More Members**

Four leaders in heating and air conditioning industry who took part in a meeting to form a local chapter of the Indoor Climate Institute. (Left to right) George P. Luscombe, Hartford Electric Light Co.; Edward C. Marsden, of Marsden & Wasserman, wholesale heating equipment dealers; J. K. Knighton, sales manager of the air conditioning division of Servel, Inc., Evansville, Ind., and a member of the board of directors of the ICI; and B. H. Dingley, Hartford Gas Co.

**New Admiral Distributor**

CHICAGO — Electric Supply Co., Albuquerque, N. M., has been named Admiral distributor in the Albuquerque and El Paso trading areas. This company was established in 1939.

**Hartford Chapter of Climate Institute Officially Launched**

HARTFORD, Conn. — Formation of a local chapter of the Indoor Climate Institute here is under way following a recent meeting of more than 60 representatives of the heating and allied industries in the auditorium of the Hartford Gas Co.

Edward C. Marsden of Marsden & Wasserman, Hartford wholesale heating equipment dealers, is acting as temporary chairman. He is to appoint an organizational committee.

Principal speaker at the meeting was John K. Knighton, sales manager of the air conditioning division of Servel, Inc., Evansville, Ind., who explained the purposes of I.C.I., emphasizing that the organization is not competitive with trade associations but seeks to make the public aware of "indoor climate" and the improvements that could be made in heating and air conditioning equipment in homes.

He cited the comments of FHA officials, who, at a forum meeting of I.C.I. in Detroit last fall, declared that the greatest single complaint from 100,000 homes related to the heating plant.

**Lee C. Leslie Joins Lewis Organization**

PHILADELPHIA — Lee C. Leslie, refrigeration engineer, recently joined the General Electric refrigeration and air conditioning service firm operated at 207 S. 24th St. here by George C. Lewis.

**John Bartlett Now At Potomac Power**

WASHINGTON, D. C. — John S. Bartlett, who has been managing director of the Electric Institute of Washington since its organization in 1934, has resigned that position to become associated with the Potomac Electric Power Co. of this city as assistant commercial manager.

Pending a selection of a successor to Mr. Bartlett, the affairs of the Institute will be managed by Mr. William Hills, assistant director.

Mr. Bartlett is a member of the National Refrigeration Service Council, and has been active in the International Association of Electrical Leagues.

**Stromberg-Carlson Branch Takes Freezer Line**

CHICAGO — Stromberg-Carlson Co.'s Chicago branch office has been appointed as distributor for Schaefer home and farm freezers.

Harold L. Schaefer, president of the manufacturing firm, states that the franchise granted the Stromberg-Carlson office includes the entire greater Chicago area.

**Filtrine**  
HIGH EFFICIENCY

**WATER COOLERS**  
Heavy-Duty Storage Type  
FOR  
Plant Cafeterias  
Army and Navy Mess Halls  
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"Manufacturers for Over 40 Years"

**FOOD**  
MUST BE  
CONSERVED

Refrigeration today is performing a vital service by guarding and preserving for future use, priceless food which might otherwise be wasted. Write for literature.

GENERAL REFRIGERATION DIVISION

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**Lipman**  
AUTOMATIC REFRIGERATION

**Fahrenheitor**

Cools Air-Warm Bottles  
in 10 minutes to 45°  
in 15 minutes to 35°

Lead Crystal handblown  
9" x 1" cork jacket handturned  
**\$22.00**

(West of Denver \$22.50) Retail (Fairtraded)  
U. S. PATENTS 2,073,631; 2,163,868  
Trademark Registered U. S. Patent Office.

**Mr. Dealer:**

Wherever you sold a refrigerator you can sell a Fahrenheitor as accessory. Uses 1 tray of ice plus ordinary salt to cool Quart Bottle in record time.

Ideal ice cube pail. Holds ice overnight.

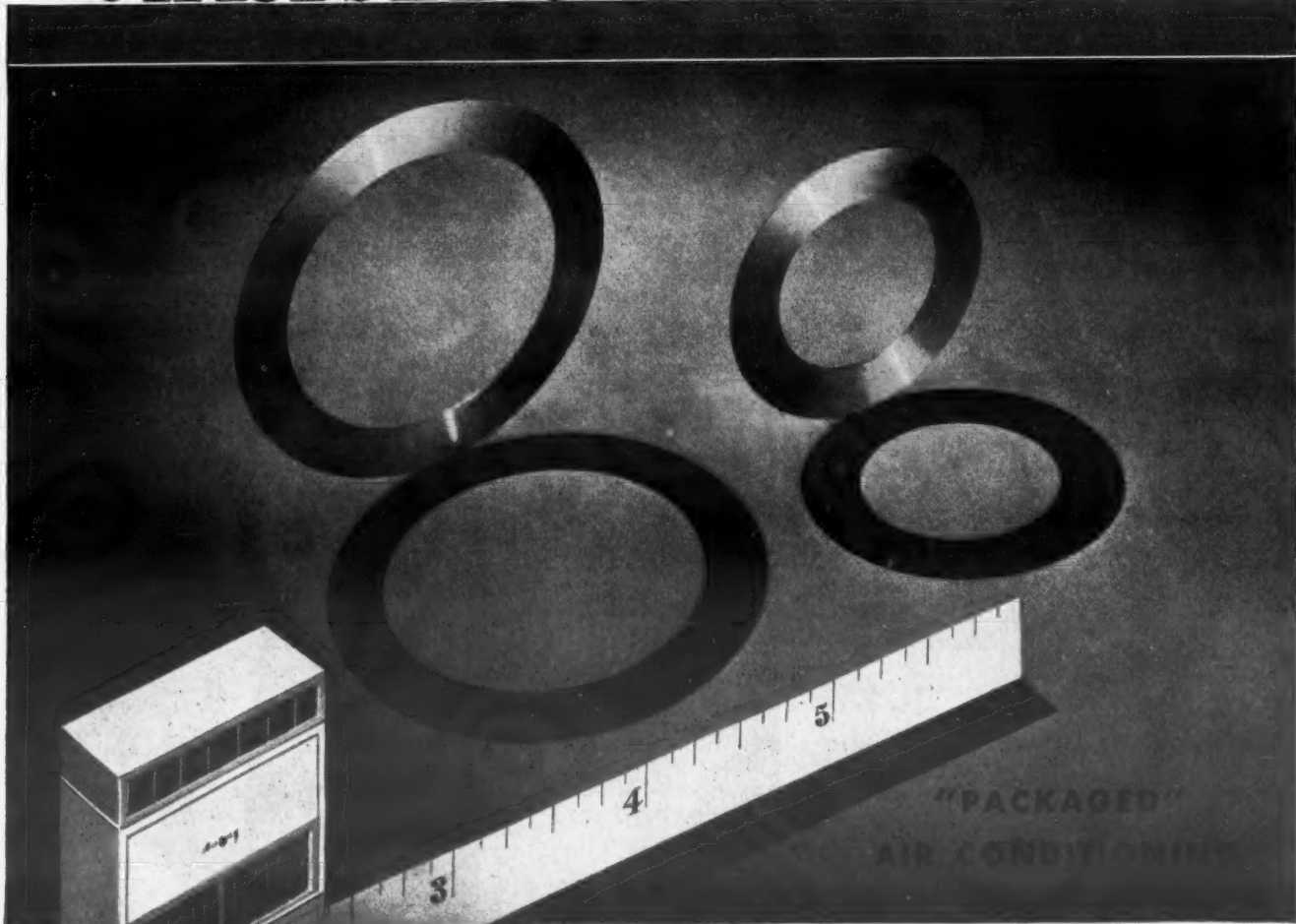
Women love its beauty,  
Men its utility.



Immediate  
Delivery

Dr. Peter Schlumbohm, Manufacturer  
41 Murray St., New York 7, N. Y.

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**CHRYSLER AIRTEMP****Compressor Valves  
Designed for Lasting Life**

Special ring-plate, non-flexing valves are an important feature of Chrysler Airtemp hermetically sealed compressors. Made of finest saw steel, these sturdy valves are pressure lubricated and operate on a "superfinished" seat. Valves that "STAND UP" are another reason why Chrysler Airtemp radial design compressors—with air, dirt, and moisture sealed out—give long, quiet, trouble-free service.

"Packaged" air conditioning units, pioneered by Chrysler Airtemp, are easy to install and economical to operate. When you have temperature-humidity control problems, turn to Chrysler Airtemp. There is a unit and capacity range ideal for practically every air conditioning, commercial or industrial refrigeration requirement. • Airtemp Division of Chrysler Corporation, Dayton 1, Ohio.

Buy More War Bonds! Tune in Major Bowes every Thursday, CBS, 9 p. m. E. W. T.

HEATING • COOLING • REFRIGERATION



## Compliance With Regulation 48 'Impossible', Says Capital Group

WASHINGTON, D. C.—What OPA Supplementary Regulation 48 to R.M.P.R. 165 means to the Electric Equipment Repair Industry, particularly in the Washington, D. C. area, is very clearly expressed in a protest recently filed with the local OPA director by the Electric Institute of Washington.

This organization's membership is composed of manufacturers, wholesalers, retailers, contractors, service agencies, and the utility who are responsible for approximately 90% of the electrical business done locally. Since the wartime restrictions on manufacture and sale of appliances became effective, the Institute has devoted its energies largely towards helping the service agencies in solving their problems with OPA, USES, WMC, and Selective Service.

The protest emphasizes the necessity of more strict compliance with R.M.P.R. 165, but states that the rules specified in Regulation 48 will not, in the opinion of Institute members, accomplish the desired results.

Several reasons were advanced to prove this assertion.

Additional clerical and supervisory help would be required, a recent survey indicating that 65% of the service agencies in this area have a personnel of four or less. This results in a minimum of clerical help and the crudest of accounting practices, and to obtain additional personnel, even if it were available, would be burdensome. The alternative would be the diversion of the limited personnel from productive repair work with the consequent curtailment of servicing facilities, now so urgently needed.

Another objection pointed out is the impossibility of recording and invoicing the exact time allocated to one job where pick-up and delivery service are included.

For example, a truck is scheduled to pick up a refrigerator unit and

at the same time deliver and install an essential part of an oil burner, and one of the customers is absent, so the truck has to make a return trip. Is the unproductive stop to be charged to the specific job or absorbed as part of the next call?

Trade practice, says the Institute, has not contemplated, regardless of war activities, such an accurate diversion of time to specific jobs but has usually allocated expense of the driver and truck to the general charges for the day. This procedure has led most shops to make minimum charges which, on the basis of hourly rates, would cover a longer time than the employee actually put on productive work.

The extreme difficulty of allocating time to specific jobs, it was pointed out, is well exemplified by the common practice of assigning a number of men to a single job and the assistance frequently required to be given by supervisory personnel to inexperienced help.

Also, in the case of necessary tests on refrigerating equipment which may run for several hours and yet require attention at intervals, a few minutes at a time, for reading instruments, a considerable amount of time in the aggregate may be consumed, assuming a number of tests are being run.

Commenting on the requirement that the invoice for each job specify

the number of hours worked, the Institute asserted that this practice has never been followed, even by those shops using the most approved accounting methods.

This omission was not for the purpose of withholding information but because of the difficulty of accurately allocating the time spent and explaining it to the customer. The service man might spend only 15 minutes on the customer's premises but consume several times 15 minutes in going to and from the location.

Indication on the invoice of the hours for which a charge is made would generally not agree with the customer's conception of the time actually spent, and additional time of the already overloaded supervisory personnel would be required to explain and satisfy the customer.

Again emphasizing the desire of the Institute to comply with the aims of OPA, the protest asserted that invoking regulations which are not practical will further aggravate conditions now existing between those attempting to comply and those who do not, and would have very disastrous results.

Many conscientious firms, even now, it is reported, are at the point where they would prefer to liquidate their enterprises entirely rather than continue under present restrictions of regulations, manpower, repair parts, and transportation.

The Institute asked that enforcement of the Regulation in the Washington area be postponed at least until it has been tested in other areas more in need of enforcement and where results in terms of increased compliance can be shown by actual field tests.

### Joins Industry Firm

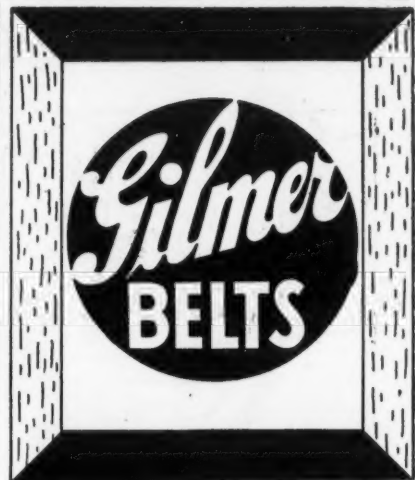


HENRY LANGE

### Lange Appointed Betz Plant Superintendent

HAMMOND, Ind.—Henry J. Lange has been named plant superintendent of the Betz Corp. here. He comes to Betz from the Steel Kitchens Corp. of Connersville, Ind., where he had been plant superintendent since 1938. He joined the firm in 1928.

The Betz Corp. is manufacturer of "Filterpure" unit coolers for commercial refrigeration applications.



Dealers who stock Gilmer Belts, for replacement on air conditioning and refrigeration units, do a profitable service business.

Gilmer Belts are rugged, long-lived, and efficient, built to do the best job possible for the user. Get hold of your Gilmer jobber today . . . be ready for more business.

L. H. GILMER COMPANY  
Tacony, Philadelphia 35, Pa.  
DIVISION OF UNITED STATES RUBBER COMPANY



**GOOD NEWS!...**  
when it comes . . .  
but are you ready  
for it?

Don't be caught napping! Get set for the huge post-war market with a distributor franchise to sell Sherer's A to Z Commercial Refrigerator line.

Juicy steaks, garden-fresh vegetables, fish, fruit and wild game will be frozen in Sherer Freezers by thousands of Americans on farms, in stores and rural homes the country over. These freezers, and display refrigerator cases of all kinds, will be available when restrictions are removed — reach-in refrigerators, walk-in cooling rooms, and other commercial refrigeration products, as well as the Sherer Distributor franchise are available now! Sherer—a pioneer manufacturer of fine commercial refrigerators, today serving our country with all types of refrigerators for the armed forces and essential civilian requirements, offers you a franchise on its complete line. Write or wire for details!

**SHERER**  
-GILLET CO.  
MARSHALL, MICHIGAN

"One of a Series Interpreting Hotpoint's Promise to the Public:  
Dependability Assured by 40 Years Experience."

## Hotpoint's 40 years experience points the way to tomorrow's sales

**T**HERE'S a rich field ahead for postwar sale of home appliances. But retailers may expect a critical attitude, too, on the part of the buying public. Those products which have stood the test of time will be the consumer's "first choice."

For 40 years, Hotpoint home appliances have earned an established reputation for dependability and performance. In more than 17,000,000 American homes they have served faithfully and with utmost efficiency.

And all through the years, research

and experiment by a competent staff of engineers have not only widened the Hotpoint family of products but have constantly expanded manufacturing facilities and improved the design of these products.

For profits and customer good-will the name Hotpoint stands high today as a symbol of value, quality and prestige that adds strength and protection to your business investment. What better name to tie to in the promising postwar market? Edison General Electric Appliance Co., Inc., 5632 W. Taylor St., Chicago 44, Ill.





## They'll Do It Every Time . . . . By Jimmy Hatlo



## Back the Attack . . . . Buy War Bonds



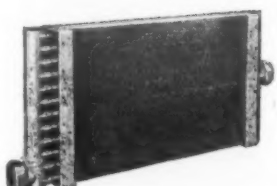
In no prewar period did G-E approach today's production rate for Air Conditioning and Refrigeration Equipment. Requirements for the armed forces and for war industries naturally receive every attention...and we welcome inquiries and opportunities to serve you on such problems.

But we can help with your postwar problems too. For G-E faces no long and difficult period of reconversion to peacetime products. The equipment now being made in record-breaking volume is exactly the equipment you will specify for civilian installations in days ahead—and the very volume of our production today is promise of its early availability for peacetime uses.

So...may we offer G-E "know-how," G-E experience, G-E engineering talent, in helping you plan, lay out, and specify systems or equipment... for commercial or industrial requirements large or small? Take your problem to our nearest office... or write to General Electric Company, Air Conditioning and Refrigeration Divisions, Section 5704, Bloomfield, New Jersey.



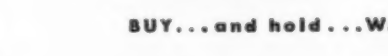
**CONDENSING UNITS:** Rugged and compact, in wide range of standard sizes from 1/6 to 125 hp for operation in single or multi-stage systems. Designed to obtain and retain refrigerant temperatures as low as -130°F.



**EVAPORATIVE COOLERS AND CONDENSERS:** "Built-Up" unit construction for flexibility of application and ease of cleaning.



**HEATING AND COOLING COILS:** Wide range of sizes to meet all normal requirements.



**INDUSTRIAL CONDITIONERS:** Of from 5 to 30 tons refrigeration in cooling, and comparable capacities for heating. For "Freon-12" refrigerant or cold water.

BUY...and hold...WAR BONDS

# GENERAL ELECTRIC

## AIR CONDITIONING . . . COMMERCIAL AND INDUSTRIAL REFRIGERATION

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Trade Mark registered U. S. Patent Office: Est. 1926

## Air Conditioning & REFRIGERATION NEWS

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F. M. COCKRELL, Founder

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On leave of absence to serve our country:  
U. S. Army: JACK SWEET, GEORGE L. COLLINS, GEORGE M. HANNING, AND HUGH T. MAHAR. U. S. Navy: ROBERT P. NIXON, ED HENDERSON, JOHN R. ADAMS, AND ANDREW GANTT. U. S. Marine Corps: PAUL R. PARK. U. S. Army Air Forces: JIM MCCALLUM, GEORGE WATKINS, AND WILLIAM WALTER. U. S. Coast Guard: MERTON GLUTTING. Waves: MARGARET MARR AND LYNDON JANE BRODE.

Member, Audit Bureau of Circulations. Member, Associated Business Papers.

VOLUME 44, No. 17, SERIAL No. 840, APRIL 23, 1945

## He Played the String Out

WENDELL WILLKIE once referred to the late Franklin Delano Roosevelt as "the Champ." We like to think of that appellation now. It fits.

Whatever history may say about FDR, one thing is sure now. He played the game, and he played it right up to the end. As professional athletes would put it: "He played the string out."

Roosevelt died for his country just as surely as did any battle-weary G. I. in the foxholes of Iwo Jima. He gave everything he had to the cause. For the last 18 months he had been a tired, sick man. He probably knew his days were numbered, but he continued to function in his role of World Statesman right up until the moment the Good Lord called him to his eternal rest.

All honor to his memory.

During the last decade this editorialist has made many sharp attacks on Roosevelt's domestic policies, and on his willingness to listen to advisers whose alien economic philosophies alarmed us. We still quarrel with those philosophies, and will continue to do so, wherever they may rear their ugly heads. But the man himself we can honor for his gallantry.

The nation now must carry on, under the leadership of President Harry Truman. Most of us don't know President Truman very well, but we have a hunch he is going to surprise the world with his abilities as an executive, as a conciliator, and as a negotiator.

One thing does seem certain: the New Deal "palace guard" won't be hanging around much longer. Truman's friends are Senators and Representatives. He is a strong believer in constitutional government. And he knows how to delegate authority.

We can expect to see a strong cabinet emerge, after a series of resignations have been accepted in due time. Furthermore, we can foresee the return of representative government to this country—thus reversing the trend to executive government, and control exercised by decree, rather than by law.

Mr. Truman is a modest man, an humble man. He was born on a farm. He served with distinction in the last war. He knows what it means to be heavily in debt, and how honorable it is to pay debts.

He comes closer, perhaps, to being an "average American citizen" than has any preceding occupant of the White House since the turn of the century.

We can all hope that these things will bring President Truman unusually close to the people of the United States. We can hope that he will understand the American people and the American spirit.

Certainly in the trying times ahead of us President Truman will need the unqualified support of all of us. He has just reluctantly taken on the biggest job in the world, and he will appreciate our help and support in his trials.



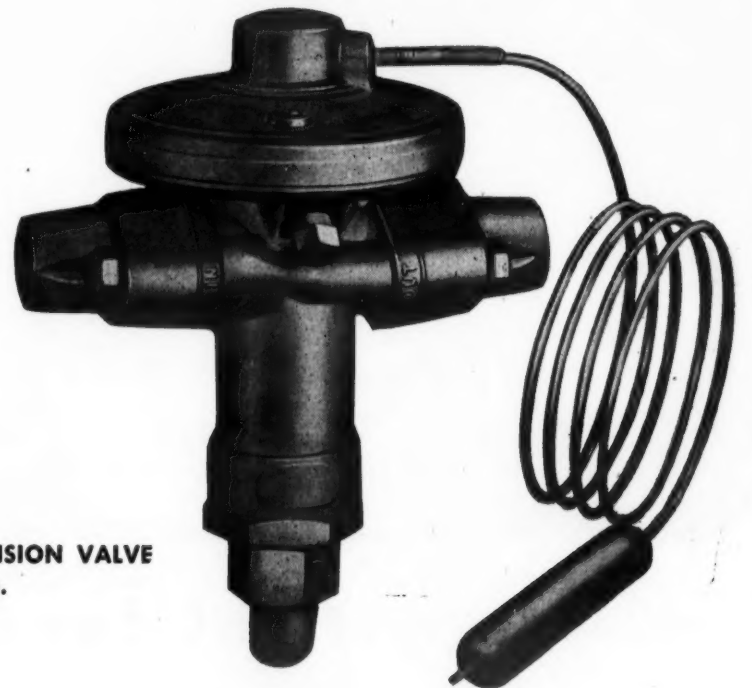


# Pan "Refrigeration River"...

**FOR GOLDEN NUGGETS OF HEALTH,  
COMFORT, ENJOYMENT . . . AND PERSONAL SUCCESS!**

The Refrigeration Industry — one of America's eight most promising fields — is like a rushing mountain stream that yielded golden wealth to the "forty-niner". It brings garden-fresh foods to the nation's markets; stores these foods with all their fresh flavor sealed in; manufactures the purest of ice; creates cool comfort for public buildings and homes; creates new surgical anesthetics; lowers living costs while increasing life's enjoyments.

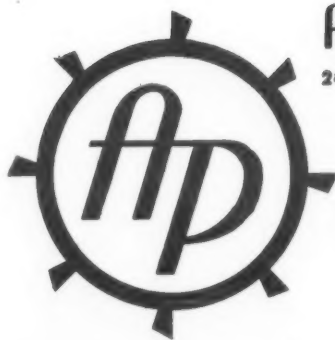
And even greater marvels are in the making, offering forward-looking men now in the armed forces interesting opportunities as engineers, technicians, salesmen, distributors, proprietors of their own businesses. For these men, the future in the great Refrigeration industry will be *highly rewarding!*



**MODEL 220K THERMOSTATIC EXPANSION VALVE**  
Capacity to 32 Ton Freon.

## AUTOMATIC PRODUCTS COMPANY

2450 NORTH THIRTY-SECOND STREET MILWAUKEE 10, WISCONSIN  
Export Department — 13 East 40th Street, New York 16, New York



## DEPENDABLE REFRIGERANT VALVES

STOCKED AND SOLD BY REFRIGERATION JOBBERS EVERYWHERE . . .  
USED AND RECOMMENDED BY REFRIGERATION SERVICE ENGINEERS

### Memo TO REFRIGERATION SERVICE ENGINEERS

May we suggest that you check your customers controls and valves NOW — replacing worn equipment with A-P Dependable units. Illustrated Bulletins upon request.





Member of the National Refrigeration Supply Jobbers Association

**Your refrigeration parts and supply house in Central New York and Northern Pennsylvania**

**TED GLOU**

**CENTRAL SERVICE SUPPLY CO.**

516-18-20 E. Erie Blvd., Syracuse, N. Y. Phone 5-4000  
209-211 Jefferson Ave., Scranton, Pa. Phone 3-4000

**WHEN PEACE COMES**

**KOCH**

**WILL AGAIN PRODUCE COMMERCIAL REFRIGERATOR EQUIPMENT FOR CIVILIAN USE**

**NOW** SOME SELF-CONTAINED REACH-IN REFRIGERATORS ARE AVAILABLE FOR THOSE WHO CAN QUALIFY . . . . .

Write — Wire — Phone

**KOCH REFRIGERATORS**

NORTH KANSAS CITY . . . MO.

# Dealers Express Renewed Interest In Selling Counter Freezers Postwar

## Many Contractors, However, Cite Dissatisfaction With Previous Product and Merchandising Policies

By Frances Weed

DETROIT—To find out how refrigeration dealers feel about the sale of ice cream making equipment and supplies as a merchandising proposition for the postwar period, AIR CONDITIONING & REFRIGERATION NEWS recently conducted a survey of a representative "sampling" of dealers throughout the nation.

The results of that survey can be summarized as follows: approximately four out of every five of the 625 dealers who answered the questionnaire replied that they plan to sell batch ice cream freezers and cabinets when they are again available.

Only 30% of these dealers, however, sold batch or counter ice cream freezers before the war, while 44% sold dispensing and hardening cabinets. Of those queried, 52% thought that there was an active prewar demand for this type of equipment.

Considerable interest was shown by these dealers in the prospect of adding special ice cream fountain equipment to their freezer line. Little interest, however, was displayed in the sale of delivery equipment, fountain and ice cream supplies, and specialties.

Of those replying to the questionnaire, 61% indicated that they intended to merchandise such equipment as stainless steel fountains, compressors, batch mixers, drink mixers, and filling equipment. Another 30% is interested in selling insulated shippers, cans, paper containers, dishes, cups, straws, spade spoons and scoops, and straw holders. Only 20% are thinking of selling ice cream mixes, extracts, flavors, syrups, fruits, and nuts.

### Sales Aids Desired

Well illustrated manufacturer's catalogs (65%) and salesmen's portfolios (62%) were the leading merchandising aids desired by most dealers. These promotional helps, however, were closely followed in desirability by training material for salesmen (60%), and consumer advertising booklets with dealer imprint (58%).

Additional sales aids mentioned by the dealers in the survey were inserts for the dealers' own catalogs (42%), posters for the showroom (40%), and decals for windows or doors (28%). Radio spot announcements were also suggested as being helpful.

An examination of the returns from the seven states having the largest population revealed that Texas had the highest percentage of dealers (49%) who sold counter freezers, before the war, followed by California (37%), Ohio (32%), Pennsylvania (26%), New York (25%),

Michigan (21%), and Illinois (11%). The prewar sale of dispensing cabinets was a little more evenly divided with Texas dealers leading again with 57%, California following with 53%, Ohio and Pennsylvania tying with 43%, and Illinois, Michigan, and New York trailing with 40%, 35%, and 30%, respectively.

Of the Texas dealers, 65% declared that there was an active prewar demand for batch freezers and dispensing cabinets. The same view was expressed by 59% of the dealers in Ohio, 58% in California, 56% in Michigan, 50% in New York, 48% in Pennsylvania, and 43% in Illinois.

In answer to the question: "Would you be interested in selling batch freezers and cabinets in postwar?", 86% of Ohio's dealers replied in the affirmative. Texas and California dealers tied for second place (84%), followed by Pennsylvania (80%), New York (79%), Michigan (76%), and Illinois (73%).

### Will Handle More Items

Expansion plans—such as adding a complete line of fixtures and repeat sale ice cream dispensing products to their basic freezer and cabinet lines—are being given consideration by many dealers. Texas dealers, for instance, again led the dealers in all states in announcing their intention to add electrical equipment, with 76% so signifying. Michigan dealers led those who declared intent to sell both delivery equipment (44%) and ice cream supplies (35%).

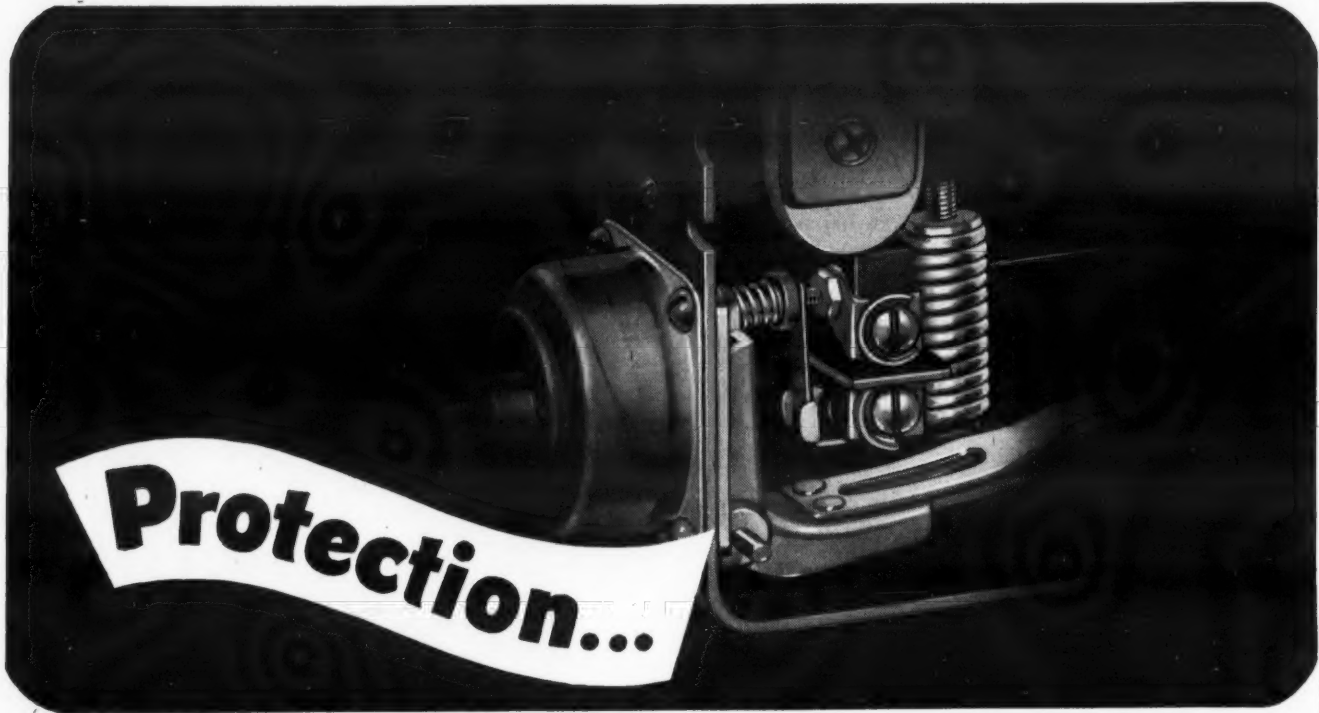
In the matter of adding soda fountain equipment, over 50% of all dealers in the seven states indicated their interest, with New York state dealers having the lowest percentage (54%).

(Continued on Page 19, Column 1)

## How Dealers By States Are Thinking on Subject of Handling Ice Cream Equipment

The following chart is a compilation of the answers dealers in the 48 states gave on the ice cream equipment questionnaire, with the total number of answers from each state listed at the beginning of the column. The questions asked were: Did you sell counter freezers and dispensing cabinets prewar? Was there an active demand for them? Would you be interested in selling them postwar? If interested in adding a line of fixtures, would you carry electrical equipment, fountain supplies, and ice cream supplies?

	Total	Sold Counter Freezers	Prewar Dispensing Cabinets	Active Prewar Demand	Selling Postwar	Electrical Equipment	Plus Fixtures: Fountain Supplies	Ice Cream Supplies
Alabama	11	1	3	5	9	8	3	0
Arizona	3	1	3	1	3	2	0	0
Arkansas	6	2	2	3	5	2	2	0
California	43	16	23	25	36	31	15	7
Colorado	6	0	0	0	1	0	0	0
Connecticut	12	5	4	6	8	4	4	0
Delaware	3	2	3	1	3	3	0	0
Dist. of Col.	2	1	2	2	2	2	0	0
Florida	19	3	6	8	13	13	7	4
Georgia	11	3	6	8	6	6	3	4
Idaho	2	2	1	2	2	1	2	0
Illinois	35	4	14	15	25	20	12	9
Indiana	16	3	6	9	11	8	6	2
Iowa	11	1	7	3	8	4	4	3
Kansas	10	3	4	6	9	8	5	3
Kentucky	5	0	0	1	4	2	0	0
Louisiana	12	3	4	8	8	8	5	5
Maine	3	1	1	1	3	1	1	1
Maryland	7	1	2	2	4	4	2	3
Mass.	13	4	5	5	11	9	3	3
Michigan	34	7	12	19	26	21	15	12
Minnesota	11	3	4	6	9	8	4	4
Mississippi	4	1	1	3	4	2	2	2
Missouri	13	3	7	7	9	6	1	2
Montana	4	3	3	3	4	3	1	0
Nebraska	6	0	1	2	4	2	1	1
Nevada	2	1	1	1	2	2	1	1
New Hamp.	4	2	1	2	2	2	0	0
New Jersey	13	11	10	9	13	10	5	2
New Mexico	4	3	3	2	3	3	3	2
New York	56	14	17	28	44	30	7	4
N. Carolina	13	1	3	7	10	7	3	2
N. Dakota	3	1	1	0	3	3	3	2
Ohio	44	14	19	26	38	28	13	9
Oklahoma	5	2	4	3	3	3	0	0
Oregon	9	4	6	6	6	5	1	1
Pa.	46	12	20	22	37	26	16	12
Rhode Island	4	0	2	0	2	1	0	0
S. Carolina	2	1	1	1	1	1	0	0
S. Dakota	8	2	4	3	7	6	1	1
Tennessee	10	3	6	7	7	8	5	2
Texas	37	18	21	24	31	28	12	8
Utah	7	2	4	5	6	6	4	4
Vermont	4	2	3	3	4	4	1	1
Virginia	17	7	5	3	14	11	5	4
Washington	15	7	9	11	13	11	3	1
W. Virginia	3	0	0	2	3	1	1	1
Wisconsin	16	5	8	9	11	7	3	2
Wyoming	1	0	1	0	1	0	0	0
Total	625	185	273	325	488	381	185	124
% of Total		30%	44%	52%	78%	61%	30%	20%



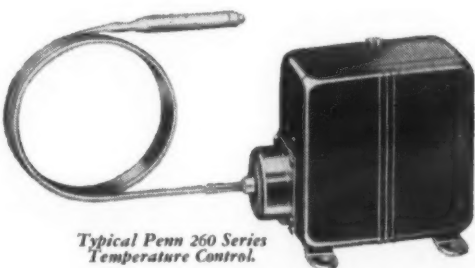
## for critical food supplies!

• Things happen to even the best commercial refrigeration systems . . . little things, unimportant in themselves, but they can cause temporary suspension of required cooling, resulting in spoilage and waste of critical food supplies. To detect abnormal "warm-up," PENN has developed its *Auxiliary Alarm Contact Structure*, which warns whenever temperature rise is excessive.

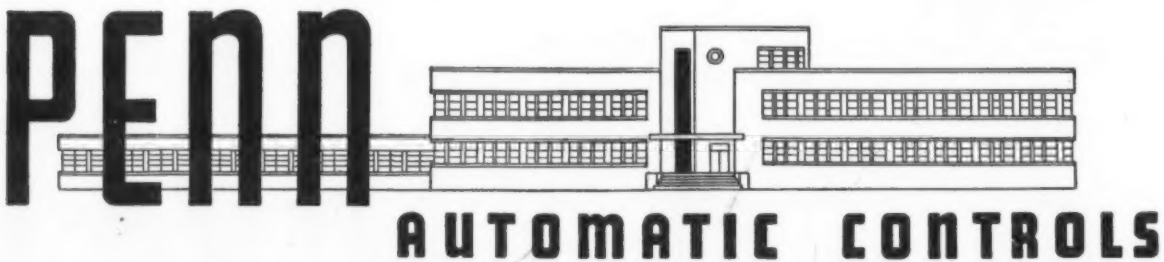
This extra precautionary measure is available in all standard temperature and pressure controls . . . providing added protection for deep freezers and commercial low temperature boxes. Its operation is extremely simple. A rise in temperature above the predetermined safe maximum causes the contacts to close . . . ringing a bell, flashing a light or

bringing some other warning device into operation.

Full details on the PENN Auxiliary Alarm Contact, together with other vital data on PENN refrigeration controls, are available in Penn Bulletin R-260. Write *Penn Electric Switch Co., Goshen, Ind.* Export Division: 13 E. 40th Street, New York 16, U.S.A. In Canada: *Powerlite Devices, Ltd., Toronto, Ont.*



Typical Penn 260 Series Temperature Control.



**AUTOMATIC CONTROLS**

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS



## There Have Been Many Problems In Handling Counter Freezers

(Continued from Page 18, Column 5)

When it came to adding delivery equipment to their lines, approximately one-third of all the dealers were interested, with New York (13%) again being the only one registering less than 30%.

New York dealers, with 7%, and California, with 16%, evinced the least interest in selling ice cream supplies and specialties. In most of the other states, 20 to 26% of the dealers indicated that they intended to expand their merchandise stocks outside of the purely mechanical goods lines.

It is evident from the survey that manufacturers, through their practice of selling to ice cream companies (who in turn lease or sell cabinets at wholesale to ice cream dealers), have already made the merchandising of this equipment unattractive to many refrigeration dealers. Tending to the "negative" view on dealer sales of such equipment are the following comments:

One Texas equipment dealer, "We had to dispose of some 15 new cabinets from 25 to 50% below our cost to clean out our line. We don't believe a refrigeration distributor or dealer should even consider ice cream cabinet sales as the same thing will be done again."

### Hit 'Direct' Selling

"All in all, 'we are from Missouri' as the saying goes. And we can't trust the manufacturers as a whole not to become the distributor's worst competitor in selling creameries direct at our price, and lower. Some day the refrigeration industry (manufacturers) will get together and sell only to and through refrigeration sales outlets."

"Isn't it also true, or rather was true, that the manufacturers were selling machines and fixtures, wholesale or direct to chain grocery's, etc., and expected us, their representatives, to install, service, and buy groceries and meat or anything else from them, wholesale or direct? Why is such a condition necessary in our industry?"

### Retarding Factors

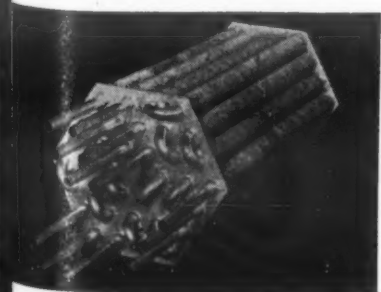
A Virginia dealer sums up his opinion concisely by the following:

The Newest and Finest  
**ELECTRIC**  
*WaterCoolers*

ALL SIZES  
FOR NAVY  
AND  
LAND USE

THE REVELATION CO.  
L. E. RAUBER  
San Fernando Rd. Los Angeles 41, Calif.

### ROME-CONDENSER Jointless Type



ROME Water Cooled Condenser coils insure trouble-free condensing equipment. Used by leading compressor manufacturers.

**ROME-TURNEY**  
RADIATOR COMPANY

222 CANAL ST.  
ROME, N. Y.

"Three factors retard sales of freezers."

"1. Ice cream companies will lower prices to keep merchants from installing a freezer. They will also go overboard with free cabinets, window and outdoor signs to eliminate an installation."

"2. Ice cream mix is usually obtainable only from the manufacturer of ice cream, and they will refuse to sell in the city where they distribute ice cream. Out of town transportation makes shipping impractical. Local milk, unless homogenized, cannot be used, and rural and small dairies will not purchase this equipment."

"3. Local ordinances (written by the dairy industry in a majority of instances) prohibit the manufacture of cream unless in a room closed to the public and conforming to rigid sanitary rules."

A Missouri dealer says flatly that

equipment dealers cannot compete with the dairies. He states:

"Dairies and ice cream manufacturing firms are selling this equipment wholesale, or at their cost price to stores who handle their products. No dealer can compete with their prices unless the entire industry will stop this practice."

A Washington dealer claims he would be interested in selling cabinets only if this practice (of selling to ice cream companies) were to change. He says:

"It was our experience that the ice cream supply firms, dairies, etc., had jobber arrangements with manufacturers of equipment and were handling the equipment without profit in order to get the equipment in and sell the supplies. For this reason we did not feel there was anything in the business for the appliance store. If this condition were to change, and I doubt if it will, then we would certainly be interested in handling any type of the equipment that would sell."

### Druggist Viewpoint

An Arkansas druggist seems to

substantiate these views. He wrote:

"Counter freezers and cold storage equipment have been sold in this territory for 15 years. Lucky for me I did not buy one for the drug store. My competitor did; he has been out of ice cream almost continually since the war restrictions. My ice cream manufacturer has supplied me with all I could sell."

Quite a few dealers, however, are optimistic about the postwar market.

A New York City dealer, for instance, declares: "There is no doubt that freezer cabinets of all types will be in great demand and it is my opinion that it will take at least three to five years for the demand to level off."

Another from New York City avers:

"There is a large market in the metropolitan district of New York for a line of merchandise such as you ask information about. We are interested in securing distribution of same for above territory. I have complete display and storage facilities, also a service department set up and operating at the present time for commercial refrigeration and industrial equipment."

### Many See Opportunity

Out in North Dakota a dealer claims that the "field has been neglected."

A Pennsylvania dealer looks forward to a big business. He notes:

"We have sold complete ice cream freezing and dispensing equipment including special serving and back bars since 1937. We believe there is a large potential for this type of equipment."

A druggist in Arkansas observes:

"Quick freezers and cold storage for residential use will be in great demand for the preservation of food after the war. This will be the greatest field in postwar years."

An Ohio dealer announces:

"As soon as refrigeration and counter freezers are available I expect to have a showroom and specialize in counter freezers, although I will sell other types of refrigeration."

From Connecticut comes the following: "My present contract does not permit me to carry other lines—"

(Concluded on Page 20, Column 1)

## Selling the Advantages of Air Conditioning to Architects and Engineers...

**Advanced design makes Bankers Life structure "The Building of the Decade"**

**Bendix Radio...another modern plant designed around air conditioning**

**THE RECENTLY built two-story plant of the Radio Division of famed Bendix Aviation Corporation is another good example of the trend toward designing the structure around air conditioning. Here, complete air conditioning throughout the plant provides comfortable, healthful working conditions and has proved invaluable in maintaining strenuous wartime production schedules. As W. P. Hilliard, General Manager, states: "It has been estimated that our entire output during the summer months would drop somewhere around 25% if we did not have complete air conditioning in our plant."**

**The Bendix installation consists of two Carrier Centrifugal Refrigerating Machines of 250 tons and 550 tons capacity. These serve the main plant and provide absolute control of temperature and humidity in inspection departments. Batteries of smaller refrigerating machines are used in connection with research and testing laboratories. Precision instruments are tested in a**

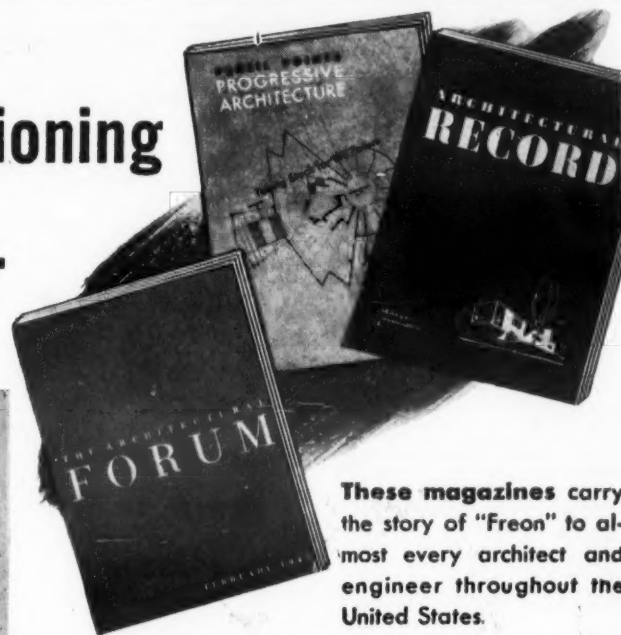
**Bendix "cold box" where bleak, 40° below temperatures duplicate conditions encountered in high altitude flying. "Freon" safe refrigerants are used exclusively.**

**The Bendix plant is a picture—today—of the plant of tomorrow. It again proves the effectiveness and value of air conditioning . . . illustrates why industrial leaders are giving more thought to this modern improvement. Keep pace with air conditioning. Your clients will ask you about it. Write for reference file data on "Freon" safe refrigerants, data on "Freon" safe refrigerants, Kinetic Chemicals Inc., Tenth and Market Sts., Wilmington 98, Del.**

**"Freon" safe refrigerants are widely used in heavy-duty refrigeration and air conditioning systems.**

**REC. U. S. PAT. OFF.**

**"Freon" is Kinetic's registered trade mark for its fluorine refrigerants.**



These magazines carry the story of "Freon" to almost every architect and engineer throughout the United States.

Perhaps you've seen these advertisements. They appear on a year-round schedule in the three leading architectural papers . . . magazines read and studied by foremost architects and consulting engineers.

These important postwar messages are designed to help your business. They call attention to the benefits and values of air conditioning . . . urge architects and engineers to recommend air conditioning in the postwar buildings they are designing.

This campaign ties in closely with those of other manufacturers doing a similar job. Kinetic Chemicals, Inc., Tenth and Market Streets, Wilmington, Delaware.

**BACK THE MIGHTY 7th WAR LOAN  
...BUY BIGGER BONDS**

"Freon" refrigerants are widely used in heavy-duty air conditioning and refrigerating systems.



**FREON** safe refrigerants

REC. U. S. PAT. OFF.

"Freon" is Kinetic's registered trade mark for its fluorine refrigerants.



## 'Will We Have To Compete With Ice Cream Companies?' Dealers Inquire

(Concluded from Page 19, Column 5) however, if I were to start out fresh, it would be in the counter ice cream freezer business."

An Illinois repairman who wants to enter the business has everything but capital.

"I have my own panel truck and do service repair and installation work. Would like to have my own business and sell and install equipment as you speak of, but I do not have the capital or place of business."

Many dealers would be interested in handling cabinets and freezers if the manufacturers could assure them that dealers would not have to compete with the ice cream companies for customer sales.

For example, an upstate New York dealer says:

"I am interested in the refrigeration line that will increase my post-war business. However, I am wondering somewhat about the ice cream

angle as I have always been under the impression that most ice cream companies furnished the customer with the equipment thereby by-passing the refrigeration service man. I would like to know more about the possibilities and whether it would work in satisfactorily with other lines which I hope to handle."

A Texas dealer has had some experience trying to meet this competition. "I have seen before the war the large creameries selling these cabinets service them free of charge indefinitely at what a dealer would have to pay for them," he writes. "In many cases a dealer would sell an ice cream cabinet at list price with a small down payment and the creamery man would come along and persuade the dealer to return it to his dealer. Then the creamery man would get him one at a saving and service it all the time, if the dealer

(Concluded Bottom Next Column)

## 1940 Shipments of Condensing Units, Industrial Refrigerating Machines and Air Conditioning Units

**Editor's Note:** The tabular material on this and the following page is the concluding part of the figures released by the U. S. Bureau of Census on a survey made of sales of the commercial refrigeration and air conditioning industry in the latest year not seriously affected by war conditions (1940). First part of the figures was published in the Feb. 26 issue.

The figures collected are generally regarded as probably the most complete ever obtained, the Bureau claiming that the reports from 295 manufacturers account for approximately 98% of the total production during 1940.

Description of Product	Production of units incorporated in unitary equipment made in same plant		Shipments of Complete Units						Purchases of — Complete Units or — Components — Compressor			No. of plants reporting
			Total (domestic and export)		Domestic*		Export†		Complete or compressor unit		Condenser	
	Number	Value (dollars)	Number	Value (dollars)	Number	Value (dollars)	Number	Number	Number			
	Refrigerants Except Ammonia Air Cooled											
1/2 Hp. and under	30,671	22,343	\$ 878,049	20,029	\$ 776,896	2,314	\$101,153	196	..	5,737	20	
3/4 Hp.	34,132	62,181	2,882,899	59,627	2,743,609	2,554	139,290	464	1,668	13,991	30	
1 Hp.	17,586	54,017	3,251,043	51,042	3,057,272	2,975	193,771	495	2,865	15,201	33	
1 1/2 Hp.	7,350	24,618	2,011,785	22,668	1,845,092	1,950	166,693	346	836	5,770	34	
2 Hp.	5,165	12,040	1,299,112	11,159	1,200,464	881	98,648	213	236	2,905	34	
3 Hp.	432	6,680	900,160	6,079	817,263	601	82,897	281	184	1,917	32	
1 1/2 Hp.	117	3,082	544,794	2,668	471,976	414	72,818	222	75	1,100	31	
2 Hp.	1,769	376,051	1,408	297,991	361	78,060	181	..	745	26		
3 Hp. and 5 Hp.	738	169,111	473	112,428	265	56,683	10	..	247	13		
Total	95,453	187,468	12,313,004	175,153	11,322,991	12,315	990,013	2,408	5,864	47,613	35	
Water Cooled												
1/2 Hp.	102	6,675	102	6,675	..	..	2	..	..	3		
3/4 Hp.	1,286	242	23,078	237	22,806	5	272	2	..	5		
1 Hp.	59	1,560	123,423	1,545	122,171	15	1,252	44	3	20		
1 1/2 Hp.	2,171	4,094	440,060	3,931	423,017	163	17,043	98	46	21		
2 Hp.	3,385	3,837	496,643	3,714	480,776	123	15,867	98	65	32		
3 Hp.	4	3,330	538,238	3,206	518,772	124	19,466	171	60	40		
1 1/2 Hp.	11	2,305	447,021	2,181	423,091	124	23,930	179	26	21		
2 Hp.	611	1,812	437,373	1,710	414,101	102	23,272	185	..	21		
3 Hp.	1,360	2,053	562,558	1,905	524,574	148	37,984	205	..	247		
5 Hp.	2,119	1,322	532,237	1,216	490,803	106	41,434	145	..	136		
7 1/2 Hp.	308	433	285,567	397	264,074	36	21,493	58	..	42		
10 Hp.	138	562	463,030	520	430,282	42	32,748	58	..	30		
15 Hp.	45	443	427,028	402	388,496	41	38,532	32	..	27		
20 Hp.	218	272,974	204	256,293	14	16,681	24	..	5	18		
25 Hp.	90	123,506	87	120,065	3	3,441	10	..	..	13		
30 Hp.	43	64,655	42	62,505	1	2,150	8	..	..	10		
40 Hp.	61	107,733	55	95,258	6	12,475	12	..	..	8		
50 Hp.	28	55,698	24	45,695	4	10,003	6	..	..	7		
60 Hp. and over	33	123,744	31	118,024	2	5,720	1	..	..	6		
Total	11,497	22,568	5,531,241	21,509	5,207,478	1,059	323,763	1,338	200	624	34	
Ammonia Refrigerants Reciprocating-Ammonia Water Cooled												
Under 3 Hp.	82	26,813	79	26,044	3	769	..	..	..	7		
3 Hp.	80	31,718	70	27,696	10	4,022	..	..	..	8		
5 Hp.	222	140,542	199	126,593	23	13,949	..	..	..	10		
7 1/2 Hp.	109	98,695	101	91,723	8	6,972	..	..	..	7		
10 Hp.	204	199,220	186	182,447	18	16,773	..	11	..	8		
15 Hp.	148	173,384	134	154,621	14	18,763	..	..	..	8		
20 Hp. and over	140	293,607	133	283,708	7	9,899	..	..	..	8		
Total	985	963,979	902	892,832	83	71,147	..	11	..	12		

(Tabulation Is Concluded on Page 21)

would buy the ice cream from him.

"If the postwar plan helps the dealer, I am in favor of it, but if these cabinets and supplies are going to be used by these large creameries as an inducement to sell their ice cream I do not think very much of this business. I am an independent dealer. I do considerable business, and when I buy merchandise I let the seller make his profit and pay whatever price it's worth."

A Georgia dealer tells us: "Due to ice cream companies furnishing equipment to their customers, demand for cabinets was limited. Those prospects who made their own ice cream, bought their equipment directly from manufacturers and cut us out. Therefore, our answers to all questionnaire questions would be limited to conditions after the war and manufacturers' policies."

From South Dakota: "Due to the fact that we are located in a very sparsely settled section of the country, a carrying of any large stock or anticipation of any large volume of business is unwarranted, however, this section being isolated as it is from the large cities is neglected by most manufacturers. We would be interested in obtaining information."

A Tennessee dealer is interested in receiving more information on this type of merchandise. "Please advise us of the different manufacturers of this merchandise," he requests. "At the present time we are contacting 60 appliance dealers and find that most of these fellows who are specialty salesmen would be interested in handling these products."

An Illinois dealer says, "At present we have weekly contacts with hundreds of food stores, restaurants, institutions, hotels, etc. We know where the leads are for the equipment you mention. Prewar we sold thousands of dollars worth of equipment; we are now re-entering this field and are very much interested in a sound proposition."

A dealer in Louisiana says, "I am interested in acquiring a line of freezers and cabinets and also supplies as soon as possible. We distribute paper cups and all types of paper dishes for fountains."

FORWARD-LOOKING families are planning post-war budgets that will include a Ben-Hur Farm & Home Freezer for freezing and storing all types of food products. The whole family looks forward to the pleasure of enjoying home-grown vegetables, fruits, meat and poultry months after they have been frozen and stored . . . besides banking substantial savings in food, and avoiding unnecessary shopping trips.

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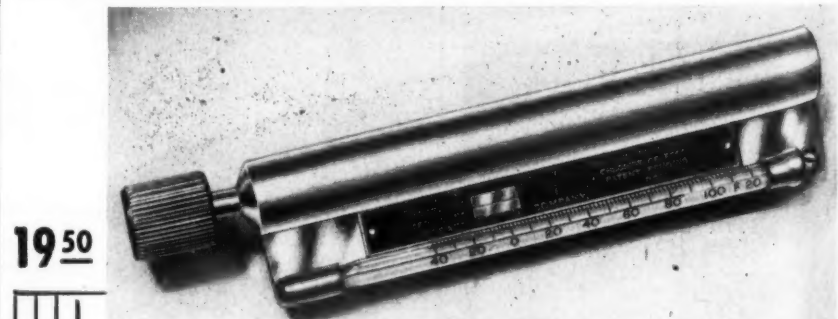


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FARM & HOME FREEZERS



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#### FEATURES—

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2. Does Not Require Removal of Control from Cabinet.
3. Shows Customer Defective Control.
4. Clinches Sale for New Controls.
5. Scientifically Designed for Easy Operation.
6. Excellent Shop Tool for Adjusting Controls.
7. Complete with Pocket Case, Instructions, and Bulb Adaptor—Ready for Use. Fully Guaranteed. Designed To Save Serviceman's Time By Showing Up Defective Controls. Every Serviceman Needs One. Sell Two Controls and Earn Back Purchase Price.

THERMOSTATIC CONTROL TESTER  
Model A100 \$19.50

Manufactured By

**AIRCRAFT SERVICE COMPANY**  
1007 Forbes St., Pittsburgh 19, Pa.

Jobber Inquiries Invited.



## Shipments of Various Types and Sizes of Refrigeration and Air Conditioning Equipment During 1940

Compressors and Compressor Units Except Ammonia										
1/2 Hp.	(#)	21,052	220,932	17,748	186,389	3,277	34,543	..	..	7
3/4 Hp.	(#)	22,130	226,132	11,748	121,851	10,382	104,281	..	..	10
1 Hp.	(#)	23,437	314,923	19,030	240,764	4,407	74,159	..	..	14
1 1/2 Hp.	(#)	6,908	138,194	5,318	108,550	1,590	34,644	..	..	15
2 Hp.	(#)	1,700	57,722	1,014	34,313	686	23,409	..	..	12
3 Hp.	(#)	1,471	60,604	1,149	48,582	322	12,022	..	..	13
5 Hp.	(#)	1,655	55,945	1,308	40,295	347	15,650	..	..	9
7 1/2 Hp.	(#)	878	48,801	736	40,879	142	7,922	..	..	14
10 Hp.	(#)	890	86,260	664	68,942	226	17,318	..	..	16
15 Hp.	(#)	439	88,713	391	77,343	48	11,370	..	..	15
20 Hp.	(#)	408	177,665	378	164,853	30	12,812	..	..	11
25 Hp.	(#)	510	210,235	468	188,753	42	21,482	..	..	14
30 Hp.	(#)	423	298,244	406	286,436	17	11,808	..	..	14
40 Hp.	(#)	140	132,440	130	126,595	10	5,845	..	..	12
50 Hp.	(#)	211	179,060	197	164,175	14	14,885	..	..	11
60 Hp.	(#)	90	138,704	85	131,588	5	7,116	..	..	11
75 Hp.	(#)	155	266,851	140	244,309	15	22,542	..	..	9
100 Hp.	(#)	281	433,579	263	415,438	18	28,141	..	..	7
150 Hp.	(#)	43	76,300	38	67,187	5	9,113	..	..	5
200 Hp. and over	(#)	361	1,628,196	360	1,625,031	1	3,165	..	..	5
Total		83,155	4,849,500	61,571	4,377,273	21,584	472,227	110	..	26
Ammonia										
Under 3 Hp.		19	5,305	15	4,296	4	1,009	..	..	4
3 Hp.		37	9,830	26	8,133	11	1,697	..	..	7
5 Hp.		98	41,395	88	38,555	10	2,840	..	..	8
7 1/2 Hp.		142	63,272	123	51,503	19	11,769	..	..	6
10 Hp.		216	134,069	192	120,316	24	13,753	..	..	9
15 Hp.		250	158,992	220	140,608	30	18,384	..	..	8
20 Hp.		168	133,130	147	113,872	21	19,258	..	..	9
25 Hp.		165	176,546	145	156,678	20	19,868	..	..	8
30 Hp.		151	180,711	134	160,907	17	19,804	..	..	8
40 Hp.		67	107,024	61	98,922	6	8,102	..	..	7
50 Hp.		136	224,489	125	199,809	11	24,680	..	..	5
60 Hp.		37	72,061	33	64,144	4	7,917	..	..	5
75 Hp.		78	160,798	70	145,843	8	14,955	..	..	7
100 Hp.		70	181,084	63	164,705	7	16,379	..	..	5
150 Hp.		59	196,613	49	160,316	10	36,297	..	..	5
200 Hp. and over		41	388,943	34	337,971	7	50,972	..	..	11
Total		1,734	2,234,262	1,525	1,966,578	209	267,684	..	..	11
Centrifugal Refrigeration Machines										
Water and brine chilling		112	2,403,536	101	2,237,426	11	166,110	..	13	4
Heat Exchanger Equipment										
Shell and tube condenser		..	846,054	..	792,764	..	53,290	81	..	19
Shell and coil condenser		..	77,298	..	71,247	..	6,051	5	..	7
Shell and tube liquid cooler		..	363,792	..	354,999	..	8,793	1	..	13
Shell and coil liquid cooler		..	199,499	..	183,246	..	16,253	..	..	9
Fin coils—heating, other than forced air units..		..	1,964,970	..	1,964,970	..	..	375	..	15
Fin coils—cooling, other than forced air units..		..	4,135,950	..	4,046,861	..	89,089	939	..	40
Plate type evaporators		19,697	677,235	19,697	677,235	..	..	102	..	8
Evaporative condensers										
Less than 3 tons		236	34,507	232	33,763	4	744	2	..	6
3 to 5 tons		422	92,604	324	73,179	98	19,425	10	..	16
5.1 to 7.5 tons		184	71,879	180	70,331	4	1,548	7	..	14
7.6 to 10 tons		208	108,191	186	97,417	22	10,774	29	..	16
10.1 to 15 tons		185	123,594	175	118,422	10	5,172	14	..	15
15.1 to 20 tons		284	235,214	264	220,116	20	15,098	28	..	16
20.1 to 30 tons		371	379,727	351	359,761	20	19,966	30	..	16
30.1 to 50 tons		394	501,331	374	474,811	20	26,520	30	..	14
50.1 tons and over		129	221,629	126	218,119	3	3,510	41	..	12
Total		2,413	1,768,676	2,212	1,665,919	201	102,757	191	..	23
Air-conditioning Coolers (Remote Type)										
Less than 1 ton		660	71,443	596	64,023	64	7,420	..	..	6
1 to 3 tons		1,584	202,581	1,459	188,136	125	14,445	25	..	20
3.1 to 5 tons		548	147,574	511	138,272	37	9,302	37	..	16
5.1 to 10 tons		1,086	437,139	1,042	421,932	44	15,207	192	..	15
10.1 to 25 tons		1,426	862,832	1,372	827,022	54	35,810	77	..	22
25.1 tons and over		651	547,641	644	541,056	7	6,585	34	..	12
Total		5,955	2,269,210	5,624	2,180,441	331	88,769	365	..	30
Ceiling and Wall-mounted Refrigeration Coolers										
Under 1,000 B.t.u./hr.		8,265	294,452	8,256	293,991	9	461	7	..	11
1,001 to 2,000 B.t.u./hr.		14,491	438,101	14,171	426,879	320	11,222	35	..	25
2,001 to 4,000 B.t.u./hr.		5,091	276,533	4,848	265,674	243	10,859	81	..	25
4,001 to 6,000 B.t.u./hr.		6,897	362,294	6,068	343,893	329	13,401	150	..	27
6,001 to 8,000 B.t.u./hr.		6,165	375,883	5,779	350,721	386	25,162	201	..	24
8,001 to 12,000 B.t.u./hr.		9,880	684,812	9,575	660,297	305	24,515	138	..	24
12,001 to 18,000 B.t.u./hr.		3,406	314,786	2,992	275,137	414	39,649	145	..	24
Over 18,000 B.t.u./hr.		993	176,667	893	160,447	100	16,220	120	..	19
Total		54,688	2,923,528	52,582	2,777,039	2,106	146,489	877	..	37
Floor-mounted—Dry Type										
Under 2 tons		176	32,943	176	32,943	..	..	..	..	5
2 to 5 tons		407	175,586	376	156,026	31	19,560	11	..	13
5.1 to 7.5 tons		562	324,370	527	297,653	35	26,717	23	..	15
7.6 to 10 tons		311	230,279	290	213,165	21	17,114	9	..	11
10.1 tons and over		379	319,385	375	314,599	4	4,788	2	..	7
Total		1,835	1,082,563	1,744	1,014,386	91	68,177	45	..	18
Floor-mounted—Spray Type										
Under 5 tons		95	59,540	83	54,010	12	5,530	15	..	8
5.1 to 7.5 tons		256	185,634	241	175,504	15	10,130	13	..	9
7.6 to 10 tons		64	55,022	61	52,078	3	2,944	..	..	6
10.1 to 15 tons		266	233,766	247	216,172	19	17,594	17	..	8
Over 15 tons		258	266,950	244	251,235	14	15,715	4	..	5
Total		939	800,912	876	748,999	63	51,913	49	..	11
Air Conditioning Units										
Store Type Units										
2 tons		661	223,249	613	203,049	48	20,200	1	32	6
3 tons		2,043	1,061,039	1,893	965,967	150	95,072	..	315	15
5 tons		2,375	1,904,860	2,260	1,804,204	115	100,656	1	241	16
7.5 tons		262	328,838	258	323,012	4	5,826	..	..	6
10 tons		303	495,552	289	454,635	19	40,917	..	28	10
15 ton and 20 tons		231	453,388	207	381,388	24	72,000	..	78	9
Total		5,880	4,466,926	5,520	4,132,255	360	334,671	2	694	54
Room Coolers										
Window-sill type		11,668	1,145,631	10,990	981,215	678	164,416	3,811	776	7
Floor type										
8,000 B.t.u./hr. and under		15,547	2,420,932	12,460	1,723,580	3,087	697,352	928	863	11
8,001 B.t.u./hr. and over		3,658	1,017,843	2,685	565,205	973	452,638	1,883	1,111	6
Total		19,205	3,438,775	15,145	2,288,785	4,060	1,149,990	2,811	1,974	12
Absorption Systems and Equipment										
		..	830,613	..	721,310	..	109,303	..	..	5

\*Continental United States.

†Includes Canada, Mexico, and United States territories.

‡This information not requested on schedule.

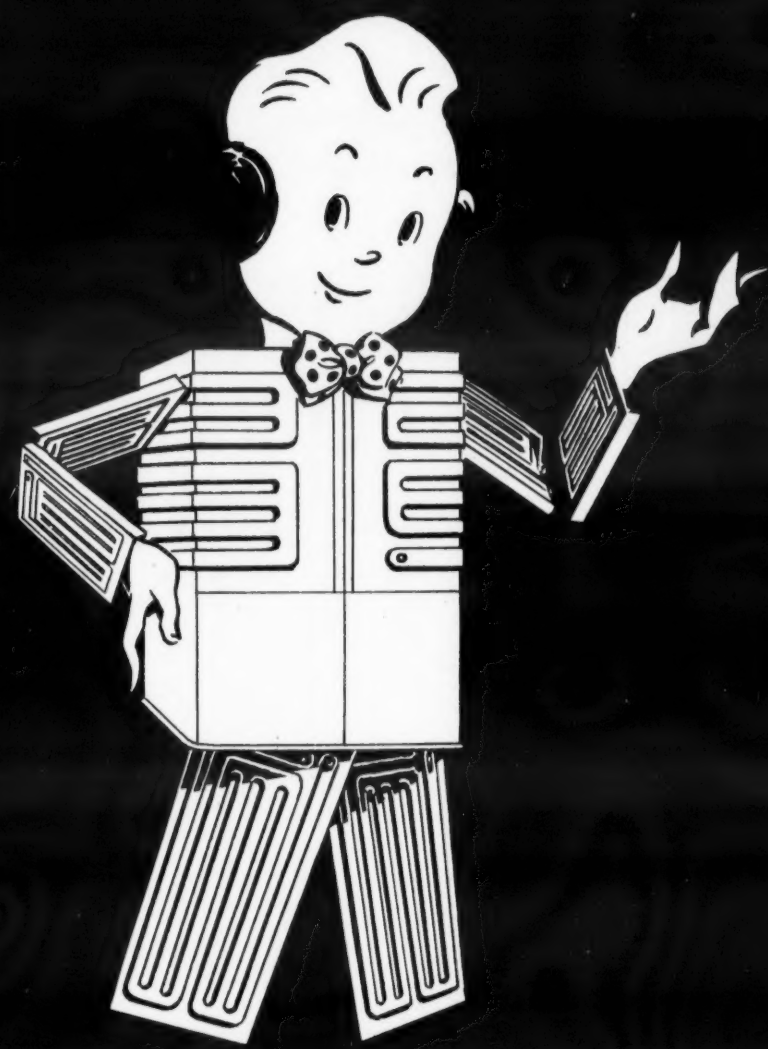
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O-KAY COILS are engineered to maintain moisture balance between air and products—to prevent dehydration. Designed and built by men who know your application problems. Write today for information.



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ELECTRIC MOTORS FOR INDUSTRY SINCE 1915

HOWELL ELECTRIC MOTORS COMPANY • HOWELL, MICH. • REPRESENTATIVES IN ALL PRINCIPAL CITIES



## ANY REFRIGERATION USER CAN

1. INCREASE REFRIGERATION CAPACITY
2. SAVE UP TO 35% OF POWER
3. SAVE CONDENSER WATER COST BY INSTALLING A

### NIAGARA Duo-Pass AERO CONDENSER

Evaporative condensing with the NIAGARA Duo-Pass lowers condensing temperatures and reduces head pressures. Users have found that power savings as high as 35% have resulted at the same time that refrigeration capacity was increased. By reducing the condensing temperature, the NIAGARA Duo-Pass also prevents the deposit of scale on condenser tubes—holds the efficiency of the condenser constant and makes these savings permanent.

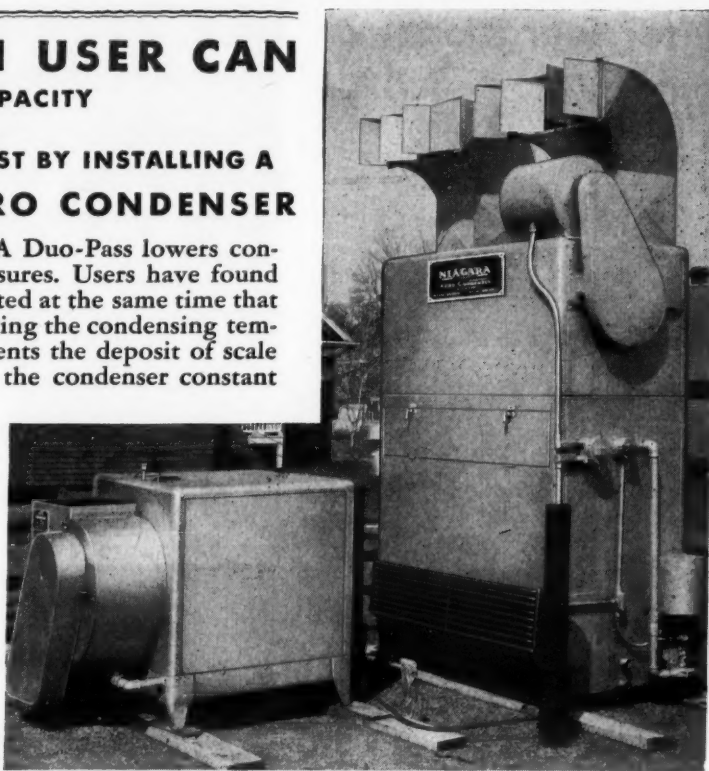
By the use of atmospheric air to take up the heat of condensation, 95% of condenser water is saved. As it replaces both cooling tower and shell-and-tube condenser, the NIAGARA AERO CONDENSER is inexpensive to install and offers refrigeration users the simplest and most practical way to increase capacity and cut costs.

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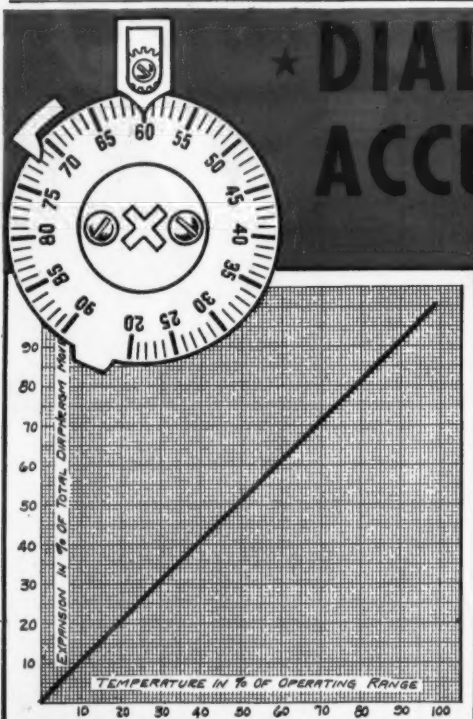
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EQUIPMENT FOR FOOD INDUSTRIES: AIR CONDITIONERS, DEHYDRATORS, COOLERS, "NO-FROST" METHOD OF PRE-COOLING, FREEZING AND HOLDING, AERO HEAT EXCHANGERS, "DUO-PASS" AERO CONDENSERS

Be Patriotic

Be a Blood Donor



**\* DIALS are EVENLY and ACCURATELY CALIBRATED OVER THEIR ENTIRE RANGE BECAUSE OF THE STRAIGHT-LINE EXPANSION OF HYDRAULIC-ACTION**

With each degree of temperature, the expansion and contraction of the solid-liquid charge of Hydraulic-Action is exactly the same. That is the reason why the dials on all White-Rodgers Hydraulic-Action controls are evenly calibrated—and always are accurate over their entire range.

### 8 EXCLUSIVE FEATURES OF WHITE-RODGERS HYDRAULIC-ACTION TEMPERATURE CONTROLS

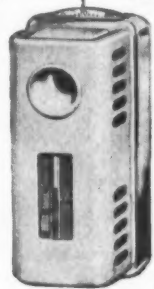
1. May be mounted at any angle or position, above, below or on level with control point.
2. Hydraulic-Action principle incorporating solid-liquid filled bulb and capillary provides expansion force comparable to that of a metal bar.
3. Diaphragm motion uniform per degree of temperature change.
4. Power of solid-liquid charge permits unusually sturdy switch construction resulting in positive contact closure.
5. Heavier, longer-wearing parts are possible because of unlimited power.
- ★ 6. Dials are evenly and accurately calibrated over their entire range because of straight-line expansion.
7. Controls with remote bulb and capillary are not sensitive to change in room temperature. Accuracy of control is not affected by temperature changes in surrounding area.
8. Not affected by atmospheric pressure. Works accurately at sea level or in the stratosphere without compensation or adjustment.

### UNIFORM EXPANSION OF HYDRAULIC-ACTION PERMITS TROUBLE-FREE INSTALLATION



CONTRACTED

Above is a cross section of the diaphragm and part of the liquid-filled capillary. In this view the liquid has contracted, releasing the pressure on the diaphragm and causing the switch contacts to function.



In this cross-sectional view, the liquid charge of the capillary has expanded with a rise in temperature. The positive force of this hydraulic action forces the diaphragm outward and causes the switch contacts to function.

Actual-size illustration of the White-Rodgers diaphragm body, the actuating element of every White-Rodgers temperature control. It is so designed as to exert full pressure at the point of contact with the switch mechanism.

No going back to adjust or recalibrate when you equip with White-Rodgers Hydraulic-Action controls. How this works is shown in the illustrations below.

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## WHITE-RODGERS ELECTRIC CO.

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Controls for Refrigeration • Heating • Air-Conditioning



## Finding 'Balancing Out' Point Of a Blower Coil and Compressor

### Method of Charting Capacities For Given Conditions Is Outlined by Carl Heilig

MONTREAL, Canada—Proper selection of blower-type commercial evaporators can be carried out by a method of finding the correct "balancing out" point of the compressor and coil to handle the refrigeration requirements of a particular job, declared C. G. Heilig, general manager, Air Coils Mfg. Co., Ltd., Oakville, Ont.

"Because a blower coil is what you might call a concentrated heat-removing unit much smaller in physical size than the equivalent pipe or fin coil, a little more care must be used in applying it," said Mr. Heilig.

"There should be no difficulty in selecting a properly balanced system for the desired operating condition if the installer or engineer will always remember that a refrigeration system is comprised of two main parts, the heat pump or compressor, and the heat absorber, and that these two parts must operate in balance together.

"The heat absorber, in this case the blower unit, absorbs heat and the heat pump (condensing unit) carries it away and disposes of it.

"The condensing unit can only pump away heat in relation to the heat absorbing ability of the cooling

unit, and the cooling unit's capacity to absorb heat is directly proportional to the condensing unit's ability to carry the heat away.

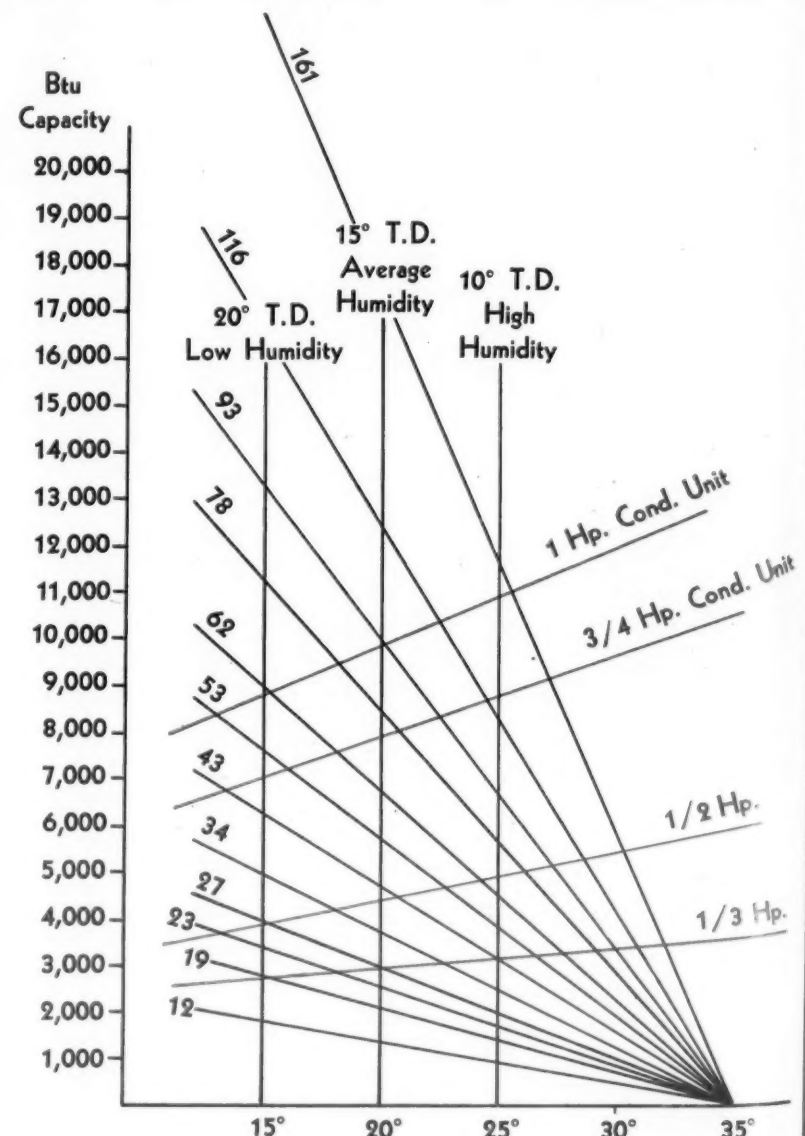
"When a blower coil and condensing unit are operating together each has a certain capacity depending on the refrigerant temperature. The higher the refrigerant temperature, the greater will be the capacity of the condensing unit; the lower the refrigerant temperature, the greater the capacity of the condensing unit, so that in operation the two balance together at some point where the heat absorption and heat removal capacities are equal.

"If a coil is somewhat undersized the condensing unit tends to remove heat quicker than the coil absorbs it, and the refrigerant temperature tends to drop until the capacity of the compressor matches the coil.

"If a coil is oversize, it tends to absorb heat quicker than it is removed, and the refrigerant temperature rises, but the two always balance somewhere, and it is this balance point that is all-important."

The proper "balancing out" point for a condensing unit and blower coil on a given job can be found by "charting out" the capacities of (Concluded on Page 23, Column 1)

Fig. 1. Chart Covering Whole Series of Units



Here is the master chart for the "balancing out" method of selecting condensing unit and blower-type evaporator. The capacity lines for the blower units are identified with the model number of the various units whose capacities may be found in the table below. This chart will apply to any installation in which the fixture temperature desired is 35° F.

### Unit Cooler Capacities

Model No.	B.t.u. Per Hour			
	1 Deg. Temp. Diff.	10 Deg. Temp. Diff.	15 Deg. Temp. Diff.	20 Deg. Temp. Diff.
12	88	880	1,320	1,760
19	138	1,380	2,070	2,760
23	170	1,700	2,550	3,400
27	198	1,980	2,970	3,960
34	248	2,480	3,720	4,960
43	314	3,140	4,710	6,280
53	380	3,800	5,700	7,600
62	446	4,460	6,690	8,920
78	561	5,610	8,415	11,220
93	666	6,660	9,990	13,320
116	830	8,300	12,450	16,600
161	1,152	11,520	17,280	23,040



# Chart to Find 'Balancing Point' of Coil and Machine Easily Applied

(Concluded from Page 22, Column 5) these two parts of the system, Mr. Heilig explained.

How he develops this chart for one set of blower coil units and one make of condensing unit is shown in the accompanying drawings (Figs. 1 and 2). The engineer or service contractor can, of course, make up his own chart from the capacity tables for the particular make and model of condensing unit and blower coil he is considering for a job.

By making up one chart to cover

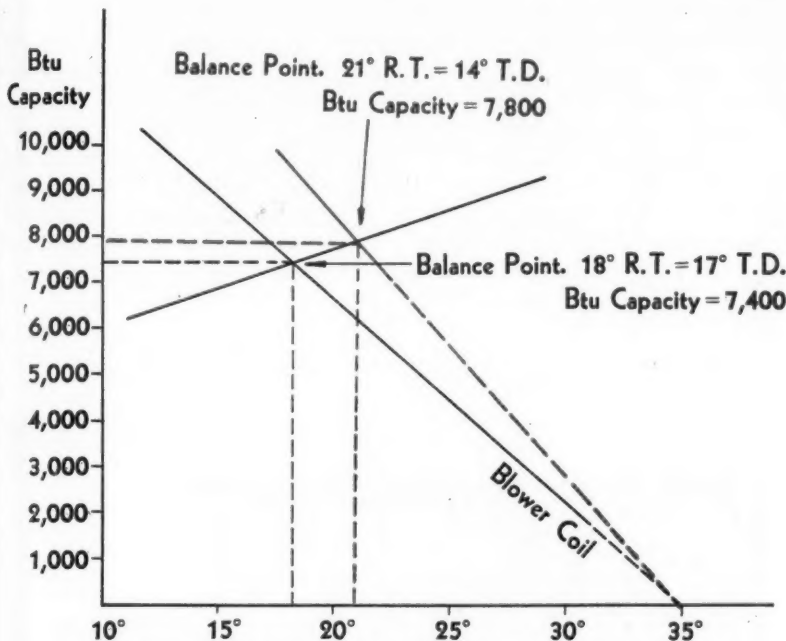
the capacities of the various blower units, and plotting on the charge the capacities of the various size condensing units, the engineer or contractor can select the proper equipment and determine the capacity and refrigerant temperature at which the system will operate.

One limitation of this chart as developed by Mr. Heilig is that it is workable for one fixture temperature only, but the engineer or contractor could probably cover most of the standard types of applications with two or three charts.

Fig. 2. How To Find the Desired Balance Point

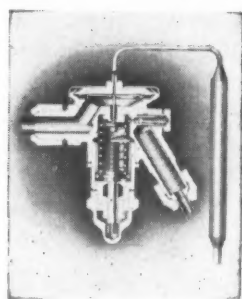
Example of Balancing Condensing Unit and Unit Cooler For a Particular Installation

Desired Fixture Temperature	35° F.
Estimated Load (based on 16-hr. operation)	7,000 B.t.u. per hour
Product Characteristic Requires	15° F. Temperature Differential
From Catalog We Find Unit Cooler With Capacity	7,000 B.t.u. at 16° T.D. 4,400 B.t.u. at 10° T.D.
From Catalog We Find 1/4-Hp. Condensing Unit With Capacity	7,800 B.t.u. at 20° Ref. Temp. 7,000 B.t.u. at 15° Ref. Temp. 9,000 B.t.u. at 27° Ref. Temp.



This shows how the "balancing out" procedure is used for a particular job. The essential facts about the particular installation are given in the tabulation over the chart. Note that the balancing point for one model of blower coil (black lines) was not considered close enough to the desired conditions, so that the next larger size blower unit was tried (see lines in red) and the result came closer to the desired temperature differential, with the setup providing greater capacity.

## GENERAL CONTROLS V-200 Thermal Expansion Valve



Interchangeable Orifice Cartridge Permits Proper Sizing ON THE JOB!

The G. C. V-200 Thermal Expansion Valve can be quickly and accurately sized to any particular installation load, by simply inserting the proper orifice cartridge on the job. It eliminates the necessity of carrying a large stock of complete valves of different capacity.

The unsurpassed sensitivity and dependability of this famous valve is achieved, in part, by a diaphragm of adequate area • the well-balanced, low-rate adjusting spring • the full-opening tight-closing ball • and the practically frictionless single pusher pin.

The V-200 handles freon, methyl, chloride, or sulphur dioxide.

Write for Catalog 52-B, for complete description.

Address nearest Factory Branch or Distributor, or write direct to

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## Electronics Plant Finds Absenteeism Answer In Cooling

MT. VERNON, N. Y.—Production in two plant sections was off. Absenteeism there was running abnormally high.

So the North American Philips Co., Inc., makers of electronic instruments for the armed forces, appealed to the War Production Board. And the WPB permitted installation of air conditioning and refrigerating equipment "for comfort" in the company's glass-blowing and other departments where high temperatures were handicapping workers.

The results: Temperatures have been lowered 50° to 60°, absenteeism has been almost eliminated—and production is up 20%.

Carrier equipment was installed in the glass-blowing room of the company's Metalix division at Mount Vernon, N. Y., and in its tube division at Dobbs Ferry, N. Y.

The glass-blowing room where X-ray tubes are made, reached temperatures as high as 130° before the air conditioning equipment was installed. Discomfort of the workers retarded production, even though they were anxious to keep their output high and keep rejected tubes at a minimum.

A Carrier self-contained unit was installed in the 12 by 30-foot glass-blowing room where six to eight employees work. Ten thousand cubic feet of gas are burned in the room each day to raise the glass tempera-

ture so it can be blown—and the heat of the room was intense. Due to the nature of glass-blowing, air velocities must be kept low to avoid excessive cooling of the molten glass while it is being blown.

But air conditioning provided by the Carrier self-contained unit has eliminated the discomfort of working in that room. The air has been cooled and humidified, and the temperatures conducive to efficient production are being maintained in spite of the room's large "heat load." Increased

production and fewer rejects tell their own story.

In the company's tube division, 40,000 cubic feet of gas are burned in an eight-hour day for processing purposes. Air temperature was extremely high and working conditions were unfavorable for best efficiency.

A forced ventilation system was installed—three units drawing 18,000 cubic feet of air per minute from out of doors and circulating it through ducts to all manufacturing areas.

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In addition to the sales and service offices maintained in principal cities, Acme offers the services of a thoroughly competent engineering staff at the factory. Tough or unusual problems arising in the field may be referred to this headquarters engineering department for solution and practical recommendations. No obligation... it is our business to be of service to the industry. Write us... we'll be glad to hear from you.



Refrigeration and air conditioning products backed by 26 years experience.



**FREON CONDENSERS**  
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**LIQUID RECEIVERS**  
**HEAT EXCHANGERS**  
**AMMONIA CONDENSERS**  
**DRY-EX WATER COOLERS**  
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**PIPE COILS**

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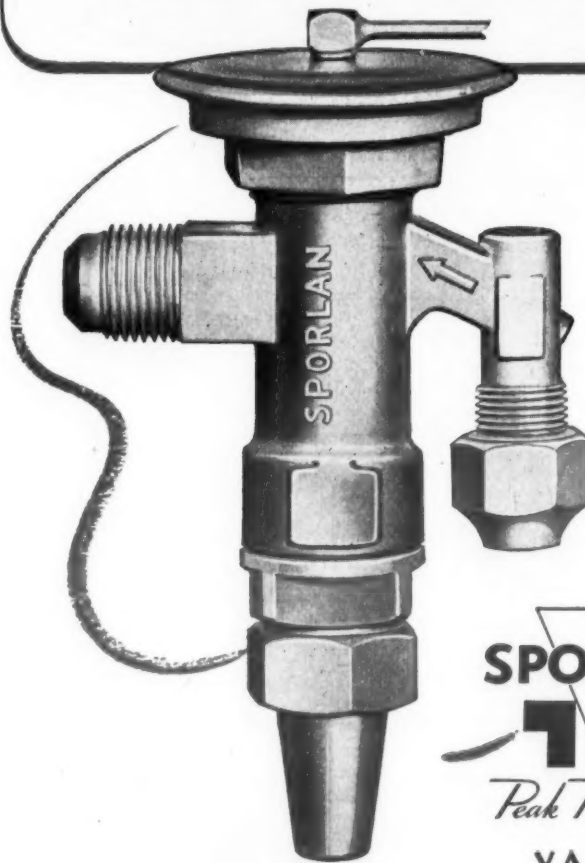
You Should Always Specify

## SPORLAN VALVES

With Selective Charges "C" and "Z"

on All Small

Commercial Refrigeration Applications!



**SPORLAN**  
Peak Performance  
VALVES

and Remember...

only **SPORLAN** can give you this **PEAK PERFORMANCE**

because

- 1 Sporlan selective charges C and Z prevent flooding the evaporator at the start of the cycle.
- 2 Sporlan selective charges C and Z prevent overloading the motor at the start of the cycle.
- 3 Sporlan selective charges C and Z minimize hunting during the running cycle.
- 4 Sporlan selective charges C and Z close the valve quickly and positively when the compressor stops.
- 5 With Sporlan selective charges C and Z the control is always in the bulb, no matter how cold the valve diaphragm becomes.

### How to Determine Which of the Two Charges to Use is Simplicity Itself

Just remember that the Sporlan C charge is always used on all jobs with suction temperatures ABOVE ZERO. The Sporlan Z charge is always used on all jobs with suction temperatures BELOW ZERO.

#### SPORLAN C CHARGE

For All Small Commercial Refrigeration Applications With Suction Temperatures ABOVE ZERO

DISPLAY CASES WALK-IN COOLERS  
REACH-IN BOXES WATER COOLERS  
BEVERAGE COOLERS FLORIST BOXES

#### SPORLAN Z CHARGE

For All Small Commercial Refrigeration Applications With Suction Temperatures BELOW ZERO

ICE CREAM CABINETS  
FARM FREEZERS HOME FREEZERS  
LOCKER PLANTS

Other Sporlan Selective Charges are the Type G for all Comfort Cooling Installations and the Type X for all applications below -30° F.

## SPORLAN VALVE COMPANY

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No. 4 OF A SERIES

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A BASIC REFRIGERATION PROBLEM

## AN EVEN DISTRIBUTION OF COOLED AIR IS ESSENTIAL

A spot temperature variation of as much as 15° is not unusual in cabinets that have dead air pockets or in which there is faulty or inadequate air circulation. The most common cause of this trouble is the lack of a mechanical air circulator, the function of which is to assure an even distribution of cooled air to all parts of the cabinet.

M.&E. cabinet cooling equipment for post-war use is designed to give temperatures of exceptional toleration at all points.



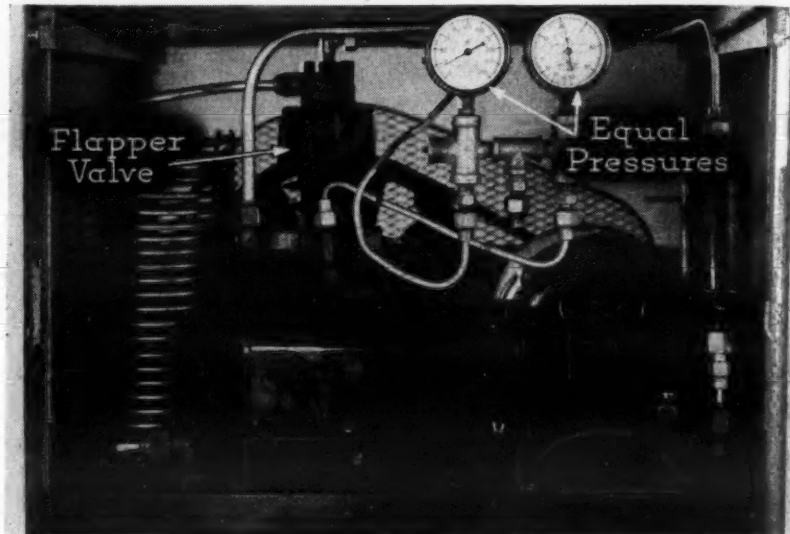
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## Servicing Frigidaire Open-Type Systems

*Instalment No. 8*

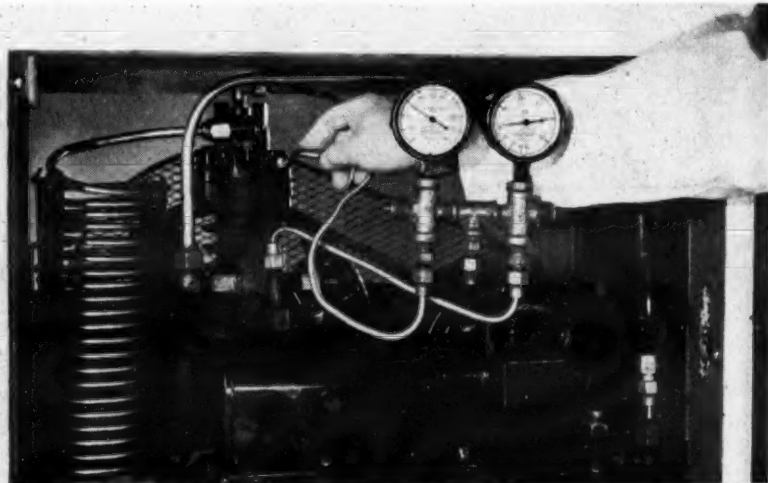
### 31—Replacing Flapper Valves



The flapper valve is the dividing point between the high and low sides of the system at the condensing unit and is located in the head of the compressor, as shown. The correct functioning of this valve is highly important to proper operation of the unit.

If, for instance, the high pressure refrigerant vapor can leak back through this valve into the crankcase, inefficient operation and erratic or too frequent cutting-in periods will result. To diagnose this condition it is necessary to install the gauges and see whether there is a tendency of the pressures to equalize when the unit is turned off. This can be further proved by first closing the suction line valve and then the compressor or discharge valve to determine whether a rise in pressure is thereby stopped. In case this test indicates that the flapper valve is leaking, the next step is to replace it.

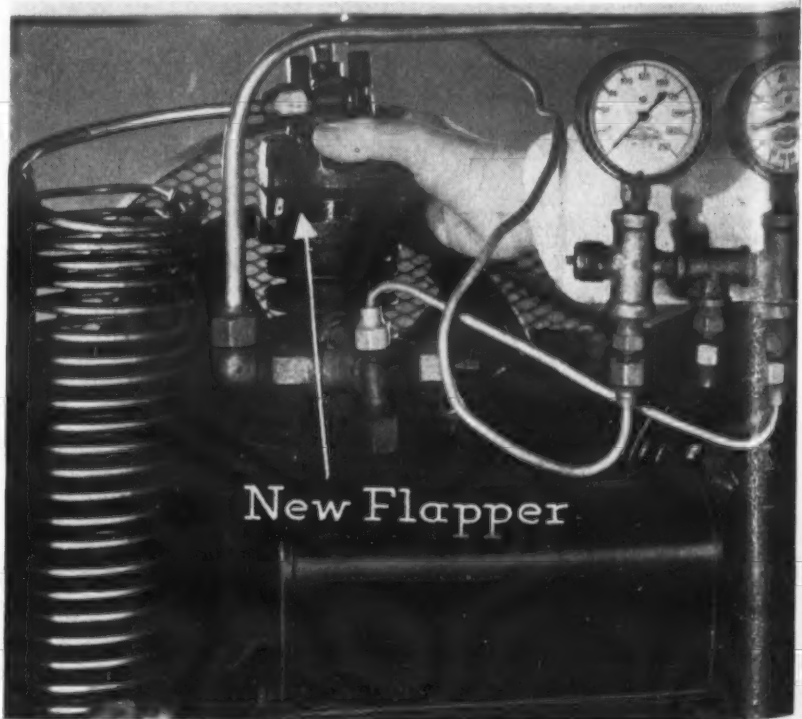
### 32—Replacing Flapper Valves (Cont.)



In replacing flapper valves, first close the compressor discharge and suction valves, after which remove head bolts, this will release some refrigerant into the room but the amount will be small—in fact, only that trapped in the compressor after shutting off the condenser when the discharge valve is closed.

In proceeding with service operation, the discharge valve is left attached to the compressor head. Having removed the bolts and taken off the head, now slip out the old flapper and—

### 33—Installing New Flapper Valve

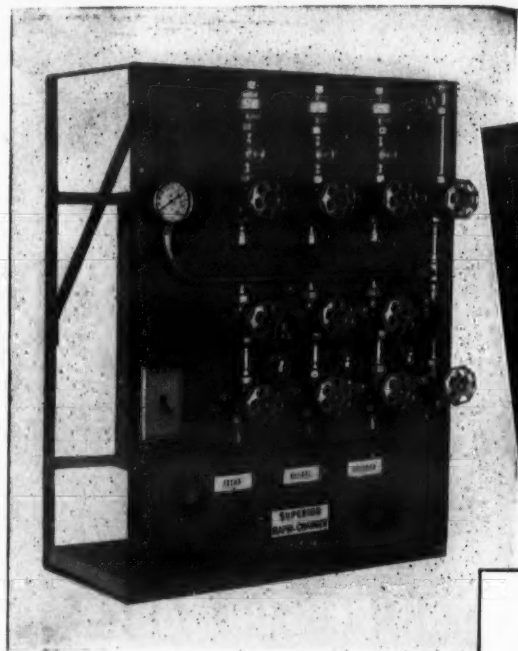


New Flapper

(Continued on Next Page)

## Superior RAPID-CHARGERS

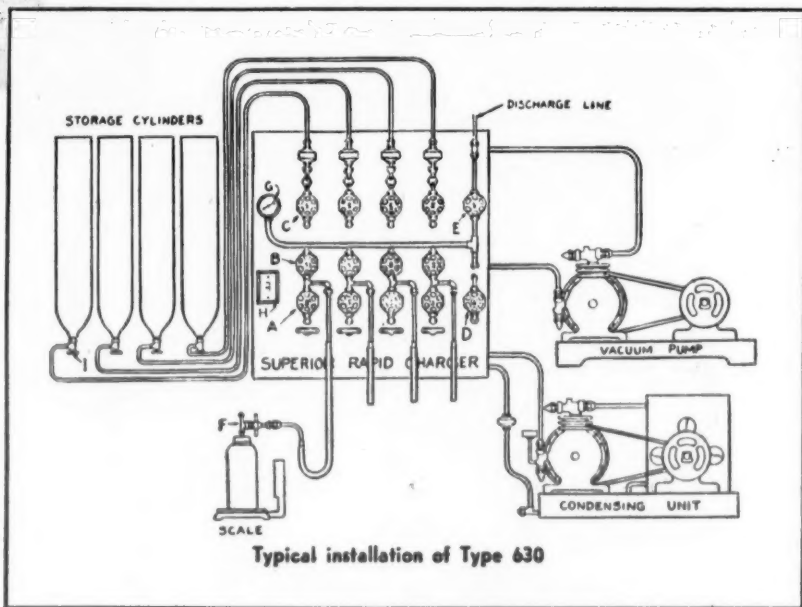
... Hi-speed refrigerant transfer systems  
... five pounds per minute by actual test.



TYPE 630

TYPE 630—illustrated above, is a complete refrigerant transfer system, with all equipment mounted on a special composition panel.

TYPE 631—illustrated below, is recommended for use where evacuation and discharge, and other facilities provided on Type 630 are not required.

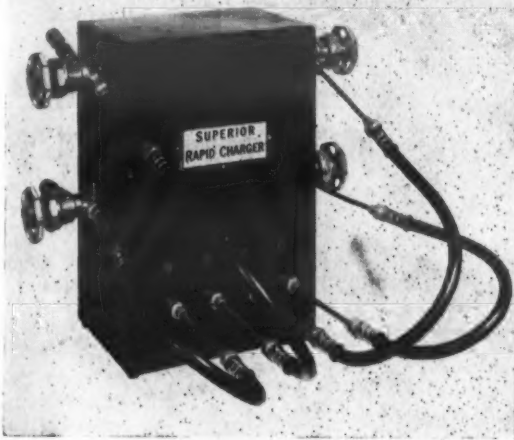


Typical installation of Type 630

**RAPID-CHARGER** is the result of careful study of all known refrigerant transfer methods, systems and problems pertaining thereto. It has instantaneous liquid coolers—one for each refrigerant to be transferred—connected in series with a refrigerating circuit, using a thermostatic expansion valve, and a small condensing unit with pressure control.

**RAPID-CHARGER** is fast—no valuable time lost in filling cylinders—no purging necessary. Refrigerant losses are practically eliminated.

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TYPE 631

No. 121

**SUPERIOR VALVE & FITTINGS COMPANY**  
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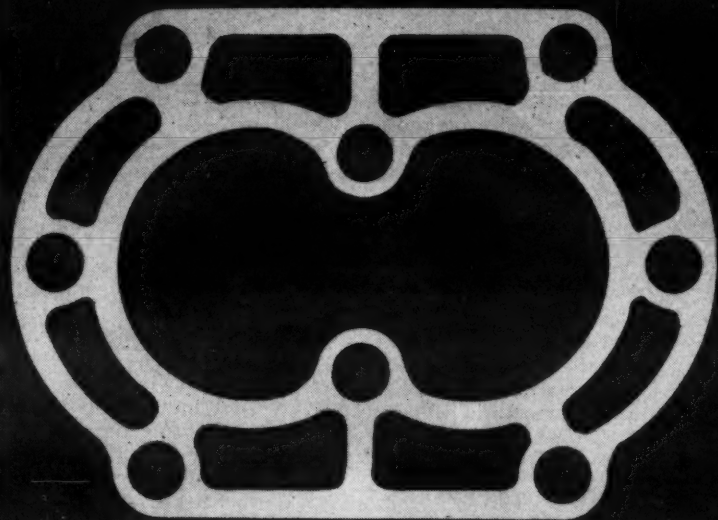
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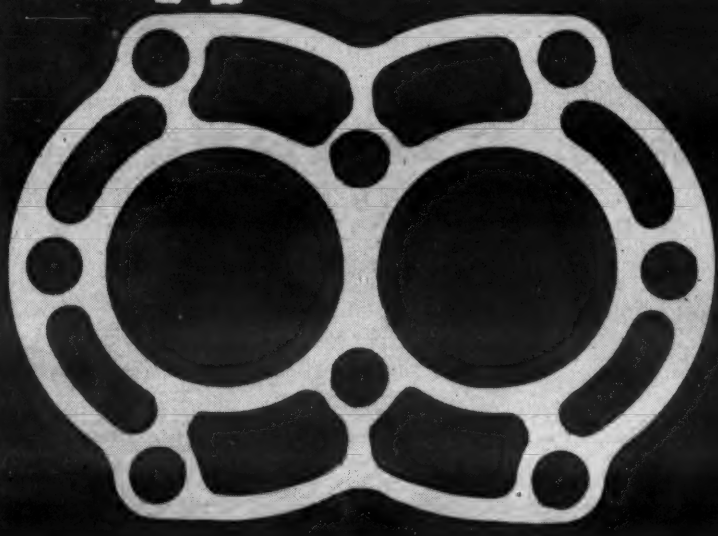
# Servicing Frigidaire Systems

(Continued from Preceding Page)

## Head Gasket



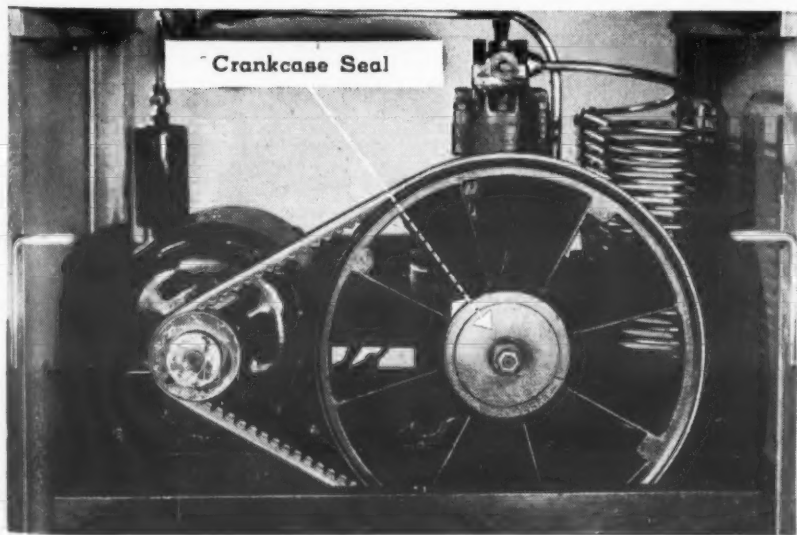
## Flapper Gasket



Install new flapper valve, using new gaskets. The gasket used between the flapper valve and the compressor head is known as the head gasket, while the flapper gasket is used between the flapper valve and the compressor body. The location and identification of these gaskets are easily determined by remembering that the flapper gasket has a partition between the cylinder openings.

Before installing the new flapper, coat on both sides with oil. After doing this, locate it properly on the compressor body, replace head, tighten bolts alternately and securely, and open both compressor valves. Except for making a leak test, this concludes service operation.

## 34—Replacing Crankcase Seals



The crankcase seal, or stuffing box as it is sometimes called, is a friction type seal installed on the crankshaft and permits an external drive without the loss of refrigerant or the intake of air.

As is indicated by the arrow, the seal is located behind the flywheel. There are, by the way, several types of seals and service men should be able to recognize them immediately.

# Electromatic

## AUTOMATIC CONTROL VALVES AND REGULATORS

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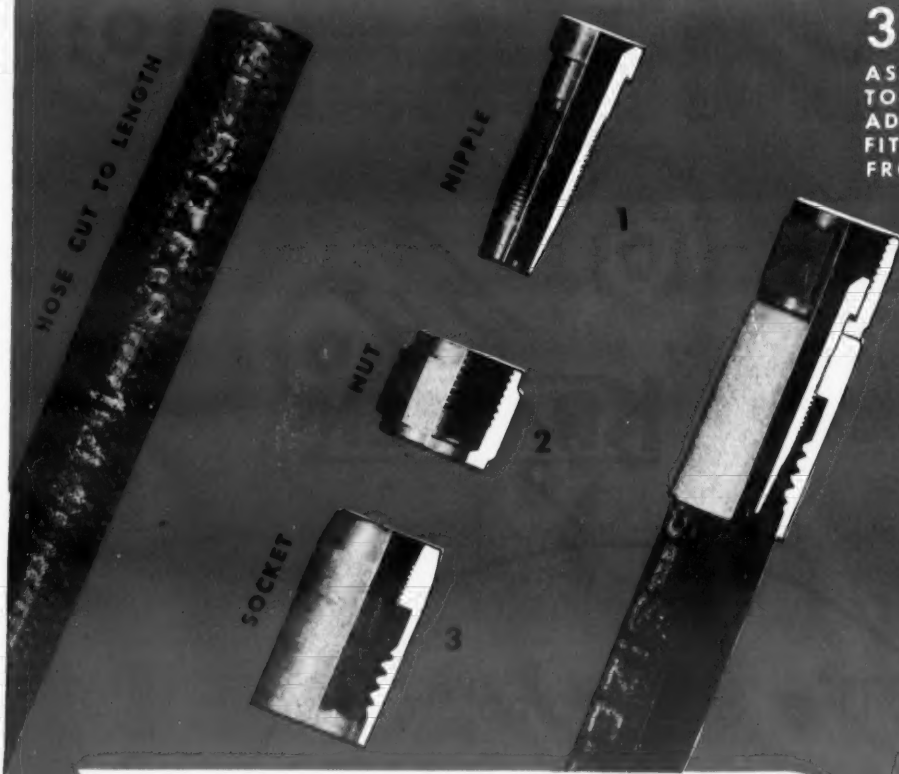
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BACK THE ATTACK . . . . BUY MORE WAR BONDS

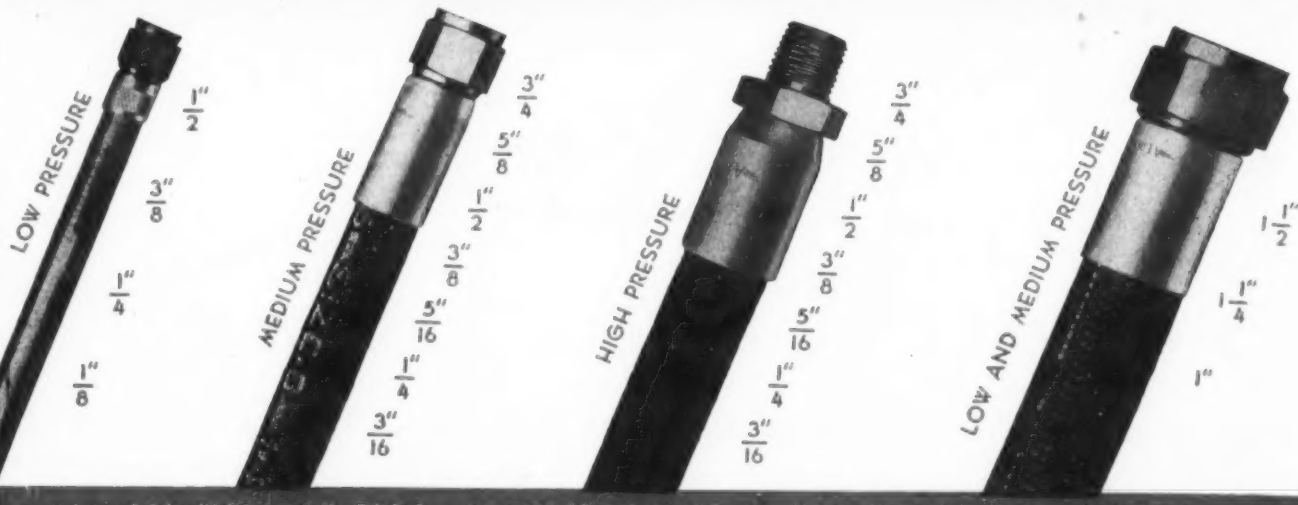
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## YOU CAN BAIL WATER OUT OF A BOAT, but . . .

. . . you can't take it out of a refrigeration system that way!

Refrigeration engineers have used TZ for years as the appropriate remover of moisture, because it is effective, time-saving, and economical. Costs about 10¢ for each pound of refrigerant in the system to be treated.

Ask your refrigeration supply jobber for TZ.

"The Moving Dehydrant"

# THAWZONE

Patented by U. S. Patent  
The PIONEER FLUID DEHYDRANT

## HIGH SIDE CHEMICALS CO.

195 Verona Ave.  
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## Humidity and Air Circulation (2)

The importance of humidity control in food preservation and air conditioning for human comfort and industrial processes is becoming more and more recognized. In fact, refrigeration equipment is now being installed and used both in industry and for military purposes, primarily for moisture removal, with cooling a secondary consideration.

### AIR CIRCULATION AND HUMIDITY CLOSELY ASSOCIATED

Air circulation is so closely tied in with moisture content and so vitally affects the condition of the surface of the foods or other products stored in a cooler that the effects of the two, humidity and circulation, are difficult to identify and sometimes cause confusion as to the reason for the unsightly appearance of the food.

However, it all resolves down to: if dry air comes into contact with a moist surface some of the moisture will be absorbed into the air and the air next to that surface becomes more moist than it was.

## Army Refrigeration Problems

By P. B. Reed

Manager, Refrigeration and Air Conditioning Division, Perfex Corp.



If the air is very dry (low relative humidity), it takes up more moisture from the moist surface (the food) than if the air were quite moist to start with (high relative humidity). If there is no air circulation the dry air next to the surface which has become moist air, stays there and there is little further loss of moisture.

Air circulation moves this blanket of air away and brings more dry air in contact with the surface and the food loses more moisture. The drier the air and the more rapid the air circulation, the more moisture the surface of the food loses.

### AIR CIRCULATION NECESSARY

There must be some air circulation,

for the air is the medium through which the cooling is carried from the evaporator to the food. Moreover, stagnant air promotes the growth of molds, bacteria, and enzymes on the surface of the food and these must be prevented, as they not only affect the appearance of the food but they may also change its composition and make it unfit to eat.

So we need some air circulation, but not too much. Just how much will vary somewhat according to the nature and kind of food, how it is wrapped or protected, the temperature and humidity of the air, and how long it is to be stored.

Experience has shown that a good

(Continued on Page 27, Column 1)

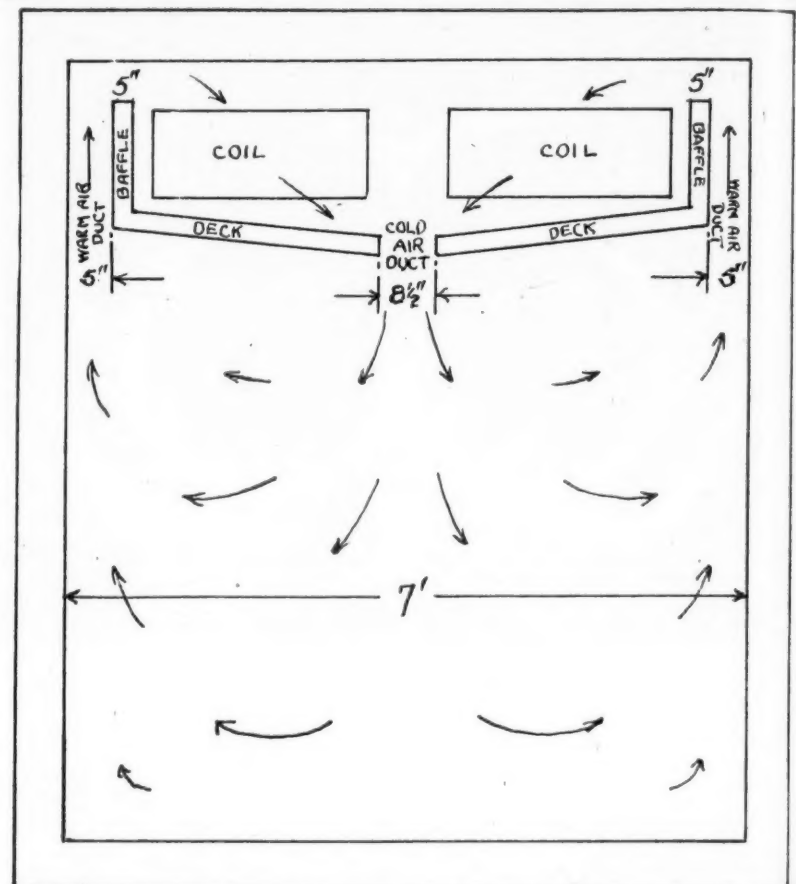


Fig. 1—"Double cycle" type of air circulation with a gravity coil installation. Notice pitch of the baffles, and space allowed for the warm and cold air currents.

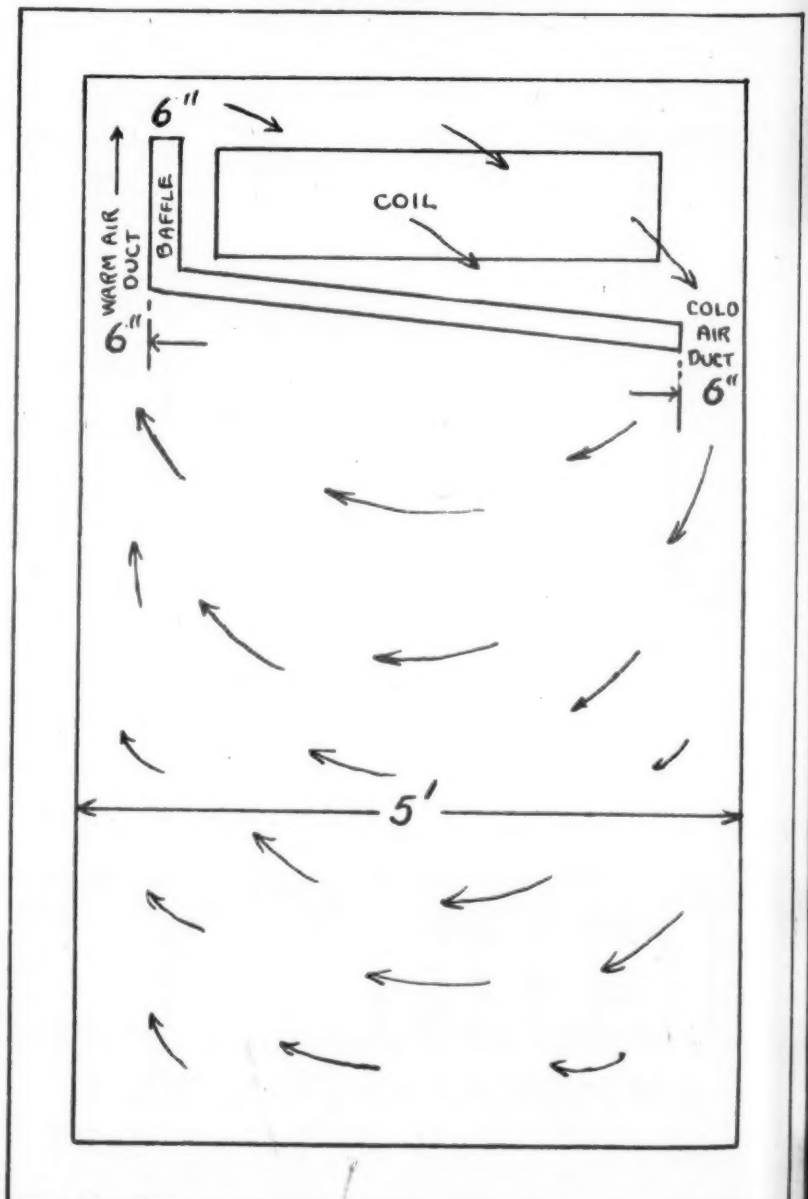
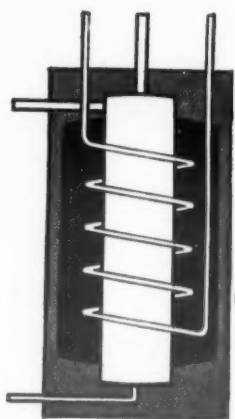


Fig. 2—Where a single gravity flow coil is used, the installation is generally of this order to provide the most advantageous air circulation.

# THERMOBANK

by  
**KRAMER**



The only completely automatic refrigeration system for temperatures below the frost line without the use of electric heaters, water spray or brine spray.

Write for  
Bulletin TV-345 N

## KRAMER TRENTON COMPANY

Trenton, New Jersey



## How Air Circulation Is Changed With Various Coil Designs

(Continued from Page 26, Column 5)

average rate of air circulation is around 300 feet per minute for a moderately short-time storage of meats of approximately 10 days or so. For shorter storage periods of only a few days a velocity up to 500 f.p.m. is sometimes permitted. For long-time storage of several weeks or months the rate of air circulation is held to about 200 f.p.m.

The allowable velocities vary considerably so that the above figures must be considered as representative only and as applying to meat in large pieces such as quarters, whole carcasses, etc. Again, it must be remembered that the relative humidity of the air plays a big part and determines to a great extent what the air velocity over the food can be. If the air has high relative humidity, 90 to 95%, the velocity of the air can be higher than if the air is rather dry, 60% for example, or even lower.

### INCREASE IN AIR CIRCULATION INCREASES EVAPORATOR CAPACITY

It must also be borne in mind that the air is the medium that carries away the heat from the product to the evaporator, and the more rapid the air movement is, the faster the heat will be transferred and the greater becomes the capacity of the evaporator. For that reason, it is possible to increase the fan speed on a forced connection evaporator to obtain more air through the evaporator in order to obtain greater evaporator capacity, but only if the product is protected, such as milk or beer in cans, bottles, kegs, etc., with which dehydration is not involved and consequently high rates of circulation can be used.

### DETERMINATION BY RATE OF AIR CHANGE

Few refrigeration service men have the instruments required to measure air velocities and they must

depend on other methods of determination. The most common method is the "rate of air change" method. Experience has shown that a good average figure is approximately  $1\frac{1}{2}$  to 2 times per minute, that is, if the rate of air circulation is such that the entire volume of air in the cooler is completely circulated through the evaporator about  $1\frac{1}{2}$  or 2 times per minute, a velocity of air over the food will result that compares to about the 200 to 300 f.p.m.—provided that the food is stacked so that the air circulation is free, that is, that the air freely circulates around all of the food in the cooler.

If there were a pile of bacon stacked over in a corner, the air would by-pass it and there would not be proper air circulation around the individual sides of bacon, even though the general rate of air change for the entire cooler was approximately  $1\frac{1}{2}$  to 2 times per minute. The rate of air change can be determined somewhat as in the following example.

### EXAMPLE

An 8 x 10 foot cooler, 8 feet high with 6 inch wall thickness, has an internal volume of 441 cubic feet (inside dimensions 7 feet x 9 feet x 7 feet). The normal forced connection coil for this cooler would have a rating of 4,500 B.t.u. per hour (based on 16 hours per day operation of the condensing unit and a 15° F. difference between the average coil temperature and the average air temperature in the cooler). In order to circulate the 441 cubic feet of air  $1\frac{1}{2}$  to 2 times per minute the coil fan would have to circulate from 660 to 880 cubic feet per minute.

For long-time storage it might be desirable to set the fan (if an adjustable speed motor or if the pitch of the blades could be adjusted) to as low as 450 c.f.m. (about 1 air change per minute), or if it is a very short-time storage the c.f.m. could be as high as 1,000. These figures are based on a comparatively high humidity of the air—85 to 95%.

Raising the c.f.m. would raise the capacity of the coil, raise the suction pressure and the coil temperature and therefore tend to raise the relative humidity, which to some extent would offset the drying effect of increased air movement.

If the cooler was used for storing keg beer or bottled milk, airflow as high as 1,200 c.f.m. would be all right.

### SIZING AIR DUCTS WITH GRAVITY TYPE COILS

The above method can be used if the evaporator is the forced convection type and we can refer to the coil manufacturer's catalog or specification sheets to determine the rated c.f.m. of the coil. If the coil is the gravity type (without a fan) some other method must be used to produce a definite rate of air circulation through the coil.

The method which is described is not very accurate, but it has been used in thousands of installations with good average results.

It involves using a fixed ratio of the area of the cold air duct to that of the floor surface. This fixed ratio is approximately 1 to 10, that is, if there are 63 square feet of interior floor surface (the 8 x 10 cooler referred to above), the cold air duct should have an area of 6.3 sq. ft. Since, with a gravity type coil in this size cooler, the air circulation would be double cycle type illustrated in Fig. 1 and the air ducts would extend lengthwise (the 9 foot dimension), the width of the cold air duct would be approximately  $8\frac{1}{2}$  inches.

The sum of the areas of the two warm air ducts should be at least, and preferably slightly more than the area of the cold air duct, so the two warm air ducts should each be about 5 inches wide.

This rule is based on the assumption that the average coil temperature will be about 15 to 20° below the average cooler temperature. The pitch of the decks should be about one inch in 10 and the decks and the warm air baffles should be insulated equivalent to one inch of sheet cork.

(To Be Continued)

## Over 75 YEARS REFRIGERATION EXPERIENCE

is on the record of the 5 Key men in the West's most modern Supply Jobber and Equipment Distributor.

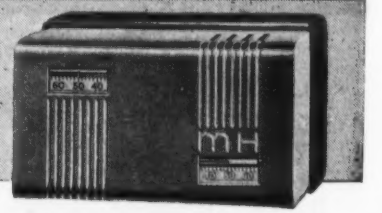
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Simply This! If you are a dealer, contractor, or service operator in our area . . . design, engineering, sales, and financial assistance in ADDITION to a COMPLETE source of supply.

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WITH "MH" Heavy Duty FRIGISTAT  
MINNEAPOLIS-HONEYWELL REGULATOR CO.

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reasons this way: "Frankly, I don't know what makes a refrigerator 'tick.' So when my service man told me he was using a Chicago Seal, I reminded him I wanted the best. He said Chicago is the only seal with a self adjusting sleeve lock that assures perfect sealing even on bent or scored shafts. That's too technical for me, but it's been good for my refrigerator. The old machine works like new, and I give full credit to Chicago Seals and a smart service man."

### 2. THE SERVICE MAN

has a "bread and butter" slant on it. "The future of my business depends a lot on the kind of repair jobs I do these days. Short of help as I am, I can't afford to skimp on a job. With the constantly improved Chicago Seals I not only do a better repair job, I do it in less time, with less work, at less cost. Why? Because those Chicago Seals are really easy to handle."



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## Leroy Keely To Head Howell Electric Sales

HOWELL, Mich.—Leroy F. Keely has been appointed general sales manager of the Howell Electric Motors Co.

Mr. Keely is a graduate of the electrical engineering school of Michigan State College. Subsequently at the Mellon Institute he did special research and development work on insulation problems as applied to electric motors. He is a member of Tau Beta Pi.

## Antrim Again With Bryant Heater Co.

CLEVELAND—Maj. William D. Antrim has returned to the Bryant Heater Co. after nearly two years of service with the United States Army Ordnance Department as a supervising research and development expert on artillery ammunition.

Mr. Antrim will devote his time exclusively to the adaptation of the new Bryant automatic safety pilot to gas range ovens and broilers.

## 'Information Please' Session Brings Up Tricks In Installation and Service Belt Troubles, Load Factors Are Discussed

**Editor's Note:** A feature of every annual conference of the Interprovincial Association of R.S.E.S. since the inception of the annual conference has been the "Information Please" session. The recent meeting in Montreal was no exception. Those in the audience wrote out questions on refrigeration problems, and with Harry Parish as moderator, these questions were put to the "board of experts," consisting mainly of the speakers at the conference.

Some of the more informative questions and answers are published here.

### How Does 'Hot Gas' Defrost Compare With Others

**Q.** How does the "hot gas" method of defrosting compare with other methods such as water defrost, and electric defrost?

**A.** The "hot gas" method has some advantages in bare pipe coil evaporators, but is probably no better and possibly not as good as water or electric defrost for finned coils or blower units. A hot gas defrosting hookup will defrost up to 5,000 feet of pipe coils in 15 minutes.

### 'Heating Up' of Seal Plate

**Q.** What causes the heating up of the seal plate on a Rotary Seal?

**A.** It may seem to the service engineer to heat up more because the seal joint is on the outside. Lubrication may not be quite so readily available on it, either.

### Correcting Belt Squeak

**Q.** Is there any method of correcting the squeak in belts other than to remove the belt?

**A.** There are a couple of remedies that may help—using talcum powder, or applying a little glycerine and reversing the belt, but probably the best thing to do is to replace the belt.

### Adjusting Belts

**Q.** How do you tell if a V-belt needs adjustment?

**A.** Grasp the belt with thumb and forefinger, and if it will twist a quarter turn, but not much more or less, it probably has the right tension. In installing belts, it is good practice always to loosen the take-up first, and tighten it afterwards.

### Proper T.D. For Butcher Box

**Q.** In selecting coils for a butcher box application, what should be the temperature difference between the coil and the air in the box.

**A.** It is difficult to give one simple answer to this question. The kind of coil, nature of the load, etc., are some of the factors which must be given consideration. Generally speaking, the temperature difference set should be the one which balances out the system best.

Caution must be exercised to see that operating pressures are such as to not exceed the loading limits on motors set by the manufacturers. In most cases, this means that the setting should be for a suction pressure corresponding to a suction temperature of not higher than 25° F.

### How to Design For Load Variations

**Q.** Should air conditioning installations be engineered for the maximum load estimated, and if so, how is the compressor controlled for lighter loads?

**A.** There are numerous methods of varying the capacity of a machine installation, the better-known ones being:

1. Use of two-speed motors.
2. Use of more than one compressor.
3. Variable capacity compressors.

### Complaint on Blower Motor Oiling

**Q.** When are blower coil manufacturers going to equip their units with motors that have accessible oil wells for re-oiling?

**A.** Blower unit manufacturers and motor manufacturers are working on this problem now.

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3/8" to 1 1/4"	Roller-type, with flare cut-off groove...	212-F
3/8" to 3/4"	Small, pocket-size cutter...	127-F
3/8" to 3/4"	Sawing vise...	184-F
1 1/2" to 4"	Sawing vise...	185-F
3/8" to 3/4"	Has quick slip-on yoke...	193-F
3/8" to 3/4"	Has quick slip-on yoke...	195-F
3/8" to 3/4"	Self-clamping type...	295-FS
3/8" to 3/4"	Wide range type...	175-F
3/8" to 3/4"	For smaller range of diameters...	93-F
3/8" to 3/4"	For smaller range of diameters...	95-F
3/8" to 1"	For larger sizes...	103-F
3/8" to 3/4"	For double-flaring metal tubing...	93-FB
3/8" to 3/4"	For double-flaring plastic tubing...	175-FP
3/8" to 3/4"	Set of 6 spring-type benders...	101-F
3/8" to 3/4"	Open-side bender. Positions anywhere on tube. Individual bender for each size...	364-F
3/8" to 3/4"	Heavy-duty bender outfit...	360-F
For use on all solder fitting work.	Outfit includes torch, 4 tips, soldering iron, 6 ft. hose and tank connections...	32
3/8", 3/4", 1/2"	Hex nut adjusters. Has holes for re-rounding tubing...	105-F
3/8", 3/4", 1/2", and 3/8"	For joining tubing without fittings. Kit includes flaring bar, 4 swedging tools, packed in steel case...	195-S
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3/8" to 3/4"	Tool for refacing S. A. E. flare seats which have become nicked or marred. Includes cutter, 5 adapters...	98-F

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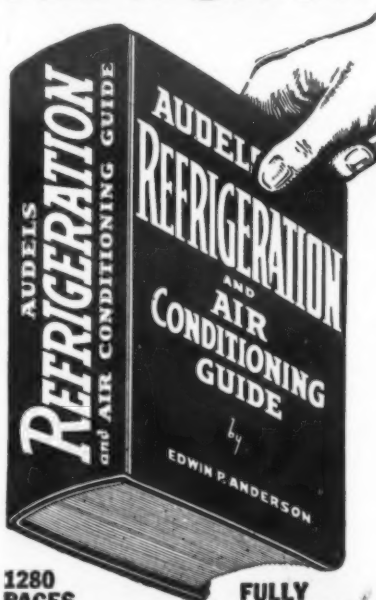
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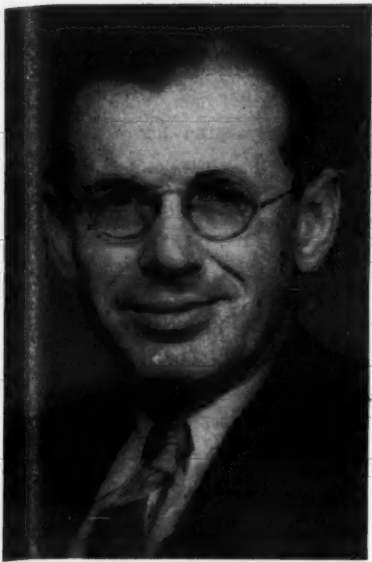
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## In Westinghouse Post



E. L. SPRAY

He now is vice president in charge of Westinghouse air conditioning and elevator activities, following dissolution of the Westinghouse Elevator Co., which formerly handled both these operations.

## G-E Profit Is Up, Shipments Decrease

SCHENECTADY, N. Y.—General Electric Co. profit available for dividends for the first three months this year amounted to \$11,762,662, or 41 cents a share of common stock, President Charles E. Wilson announced recently at the annual meeting of the company's stockholders. This represented an increase of 13% over the \$10,384,405, or 36 cents a share, earned during the corresponding quarter of last year.

Net sales billed, representing shipments, during the first quarter of this year totaled \$309,766,472 compared with \$354,624,206 in the same period a year ago, a decrease of 13%. Mr. Wilson explained that the reduction in billing resulted from lower prices on war products and from decreased output in one operating department where it was necessary to make a complete change-over in order to manufacture a different type of product required by the Armed Services.

## Krug Outlines WPB Retooling Programs

(Concluded from Page 1, Column 2)

tools and equipment needed for such lines. The country cannot yet undertake the impact of this kind of procurement."

The statement further enlarged upon the criteria which will be used by war production in supplying a AA-3 rating to applicants for bottleneck tools and equipment. These criteria are as follows:

1. There is no reasonable prospect that the items can be acquired at the time requested without a rating. This condition will usually exist only in cases of items having a long manufacturing time so that unrated deliveries are difficult to schedule.

2. The time requested for delivery is such that, if V-E Day were to occur immediately and applicable WPB restrictions on production were removed, the purchaser's resumption, initiation or expansion of production would be materially delayed by failure to receive the item on the specified date.

3. The item is needed for production at the minimum economic rate.

4. The items are only a small bottleneck of the total equipment needed for the civilian production, the remainder being on hand or available without special assistance.

5. The items are actually needed to permit production, either in the purchaser's plant or an industry dependent on him and are not to replace or supplement existing equipment which is adequate though less efficient.

6. The product which the applicant will manufacture must generally be one that is needed for the civilian economy.

Mr. Krug also stated that the same criteria would be used in authorizing the minor amounts of construction which are necessary to permit the setting up of workable lines of production for civilian products, but again emphasized in this connection that no large scale new plants, such as a number of large industries are planning, could be authorized at this time.

The new policy has been cleared by the Central Requirements Committee of the War Production Board and has the concurrence of the armed services of the other claimant agencies.

## Delay Likely In Radio Reconversion Moves

(Concluded from Page 1, Column 2)

predictions of civilian production this year have been too optimistic.

There is one possibility for civilian radio production, however, it is said, if radio equipment intended for the European war were to be classed as surplus property, instead of being converted for use in the Pacific area.

Such equipment could be utilized for the production of civilian radio receivers. This move, of course, would require relaxation of rules governing radio production.

While not confirming the report that new civilian radios aren't likely to come for a long time, officials of the OPA have indicated that they aren't making any hurried preparations to price radios for postwar sales. OPA pricing meetings with the radio industry have been held and are still being conducted, but there is no move now to whip things into shape for radio production in the near future.

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Wilson VERTI-COIL Milk-Cooling Cabinet (U.S. Pat.) integrates in its design the tremendous cooling action of the Verti-Coil Prime Surface Plate Coil to provide a positive non-mechanical circulation of the refrigerated water bath. . . . Effectively cools all of the milk, including the hard-to-cool top milk where spoilage starts.

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WPB says old refrigerators must last--no new ones will be made until after V-E day

Your best working partner in the critical days ahead is Davison's Silica Gel. It lengthens the life of existing equipment because—

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## WAR INDUSTRIES NEED REFRIGERATION

The use of refrigeration in industry has been greatly accelerated by the war. In peacetime this expansion may logically be expected to continue. Write for literature.

### GENERAL REFRIGERATION DIVISION

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Patented CROSS-FIN COILS—  
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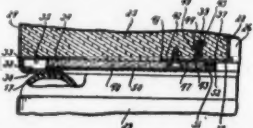
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## PATENTS

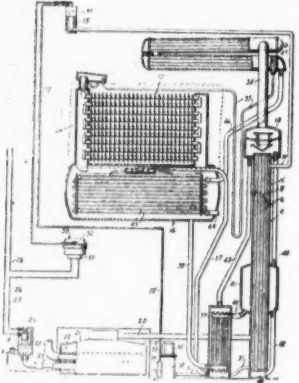
Weeks of Mar. 20 & 27

2,371,987. REFRIGERATING APPARATUS. Martin J. Gouloose, Grand Rapids, Mich., assignor to Wash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application July 28, 1941, Serial No. 404,272. 1 Claim. (Cl. 220-9.)



A cabinet construction comprising an outer casing and an inner liner arranged in spaced apart relation, said casing having a pocket and a flange extending toward the liner, said liner having a flange extending toward the casing and a rearwardly directed portion extending from the liner flange with both of said flanges being positioned on substantially the same plane, a non-metallic breaker strip bridging the space between said flanges and having one edge thereof positioned in said pocket, means engaging said rearwardly directed portion and secured to the breaker strip for supporting the breaker strip in engagement with said flanges, a thin covering strip of sheet material of low heat conductive value formed to present a series of longitudinal convex portions separated by recesses on one surface thereof and a series of concave portions connected together by ridge portions on the opposite surface thereof, said covering strip extending across and covering the outer face of said breaker strip with one edge thereof being positioned in said pocket between the breaker strip and one wall of said pocket and the other edge thereof bent around an edge of said breaker strip so that said bent edge of said covering strip is disposed between the flange of said liner and the inner face of said breaker strip, said breaker strip being provided with a longitudinal groove on its inner face for the reception of the marginal edge of said bent edge portion of the covering strip for frictionally and releasably locking said covering strip to said breaker strip, said ridge portions of said covering strip engaging the outer face of said breaker strip.

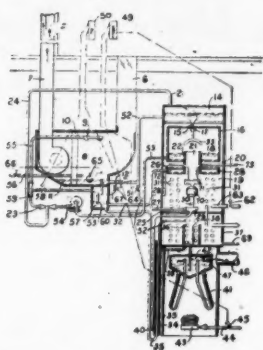
2,372,044. REFRIGERATION. Sven W. E. Andersson, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application Aug. 21, 1941, Serial No. 407,746. 8 Claims. (Cl. 62-5.)



1. In refrigeration apparatus, a micro-switch provided with an operating pin having a reciprocatory movement, said switch being operable with movement imparted to said pin in the neighborhood of .001 inch, an expansible fluid thermostat responsive to a temperature condition affected by said apparatus and including a hollow element having a movable wall member, mechanism operatively associating said pin and said wall member, said mechanism including a blade having reciprocatory movement in a lengthwise direction through a distance considerably greater than .001 inch and serving as an indicator to indicate the condition of said switch, said blade also being movable in a second direction transverse to its length, and said mechanism being so constructed and arranged that said blade is manually movable in a lengthwise direction to a first position and biased to move to another position when movement is imparted thereto in the second direction by said movable wall member, the movement of said blade to said other position imparting movement to said pin to actuate said micro-switch.

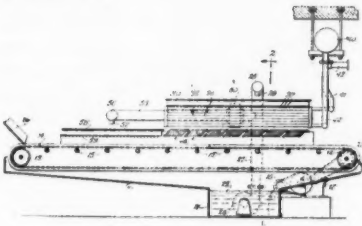
2,372,309. METHOD AND MEANS FOR AIR CONDITIONING. Francis R. Bichowsky, Ann Arbor, Mich. Application Aug. 21, 1940, Serial No. 353,573. 15 Claims. (Cl. 287-3.)

1. The method of modifying the temperature and humidity of air which comprises the steps of passing a primary absorbent solution in contact with air, passing said primary absorbent solution through an evacuated zone wherein a portion of the solvent is vaporized, absorbing said vaporized solvent in a solution of



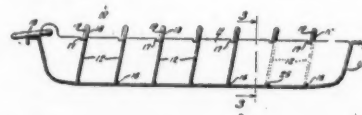
secondary absorbent, mixing a portion of said secondary absorbent with said primary absorbent, and recontacting mixed absorbent with air.

2,372,373. METHOD AND APPARATUS FOR FREEZING FOODS. Joseph L. Gilson, Hartsdale, N. Y. Application Sept. 20, 1940, Serial No. 357,603. 14 Claims. (Cl. 62-170.)



10. Apparatus for rapidly freezing foodstuffs by direct contact with a liquid of low freezing point, comprising a foraminous conveyor for transporting a single layer of said foodstuffs in a generally horizontal direction, means directly above and in closely spaced relation to said layer and propagating, by the force of gravity, a plurality of solid streams of said liquid of low freezing point to fall over substantially the entire width of said layer and over a substantial part of the length thereof and in sufficient volume to cascade over and around said foodstuffs, and means arranged directly under said conveyor for collecting the spent liquid, the propagation of said streams by the force of gravity providing a low impact velocity of said streams against said foodstuffs.

2,372,483. FREEZING TRAY. Harvey D. Geyer, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Feb. 10, 1937, Serial No. 125,025. 7 Claims. (Cl. 62-108.5.)



6. A unitary grid structure for disposition in a freezing tray and removable therefrom as a unit, said grid structure comprising a main wall having a series of cross-wall-retaining openings therein spaced along its length and a series of cross walls loosely retained in said openings, said cross walls extending below said main wall so that said cross walls will be tilted by gravity to an inclined position when they are engaged and lifted by the bottom wall of said tray when said grid rests thereupon, said cross walls being arranged to be manually tilted one after the other from this inclined normal freezing position to more upright positions after the tray contents are frozen to loosen the ice blocks from their frozen bond to said grid structure.

## Westinghouse '44 Sales Top \$835 Million To Set All-Time Record

PITTSBURGH—All-time high in net sales billed is reported for 1944 by Westinghouse Electric & Mfg. Co. with the total set at \$835,737,004, a gain of 18% over the 1943 figure, according to a report issued to 48,362 stockholders by A. W. Robertson, chairman, and G. H. Bucher, president.

Net income for the year was \$26,019,097, compared with \$21,401,568 in 1943, an increase of 22%. This represents \$8.11 per share on capital stock outstanding.

"The company is in excellent financial condition," the report declared. "On Dec. 31, 1944, current assets amounted to \$381,600,567; current liabilities were \$185,287,348—a ratio of 2.1 to 1. Current assets compared with \$342,622,229 at the end of 1943, the increase being principally in cash and government securities.

"The increase in current liabilities from \$156,646,282 in 1943 was caused principally by provisions for federal taxes and renegotiation requirements. Working capital at the end of 1944 was \$206,313,219, compared with \$185,975,947 at the end of 1943."

## O. D. Jennings Co. Wins Army-Navy 'E'

CHICAGO—O. D. Jennings & Co., producer of refrigerated vending equipment, was presented with the Army-Navy "E" award at ceremonies in the company's plant here.

## CLASSIFIED ADVERTISING

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PAYMENT in advance is required for advertising in this column.

### POSITIONS WANTED

SALES REPRESENTATIVE. Eighteen years experience in the household and commercial field as manufacturer's representative setting up distributors and dealers, also as distributor salesmanager. Experience also covers laundry equipment, gas and electric ranges, and radios. Representation for manufacturer or distributor in Texas only. P. O. Box 8067, Houston 4, Tex.

ARE YOU having trouble with your installation and service work? Refrigeration service man, ten years experience would like job supervising service and installation. Have sound, aggressive ideas and can build your service department into a well-paying proposition. Also capable of training new men. Box 1701, Air Conditioning & Refrigeration News.

APPLIANCE and refrigeration executive available. Thoroughly experienced with all phases of service, production, inspection of refrigeration and household appliances. Past record qualifies me to organize and supervise any wholesale or manufacturing operation in this industry. Member A.S.R.E. and Refrigeration Service Engineers. Highest type references furnished. Box 1702, Air Conditioning & Refrigeration News.

SALES EXECUTIVE. Capable, energetic, progressive, producer. National experience. Background 17 years sales for manufacturers, four years specialty distributor, four years production. Experienced domestic and commercial refrigerators, frozen food units, air conditioning, electric and radio equipment. Seek position of responsibility, organizing, and developing new business. Box 1706, Air Conditioning & Refrigeration News.

### EQUIPMENT WANTED

WANTED 7½ or 10 ton air conditioning unit with coils. AL'S REFRIGERATION SERVICE, 5630 East 16th Terrace, Kansas City, Mo.

TEMPRITE OR RUSS instantaneous beer coolers, new or used, any size. State quantity and price wanted. GOODYEAR, 3811 Penn Ave., Pittsburgh 1, Pa. Mayflower 5959.

WANTED: One ¾-hp. water-cooled self-contained room cooler. New or used. Prefer Frigidaire, Model SC80 or 81. GEORGE A. HOLDER & CO., INC., Lynchburg, Va.

USED AND surplus refrigeration and air conditioning equipment is in great demand. Wire us for speedy action and the highest cash price. Parts, units, complete systems purchased anywhere, all sizes and any condition. E. M. FAIRBANKS CO., 2548 E. Tremont Ave., New York City 61, N. Y.

### POSITIONS AVAILABLE

WANTED: Design and production engineer for Refrigeration Cabinets. Experience with low-temperature cabinets preferred. Permanent position. Exceptional opportunity for advancement with one of industry's leading firms. Capable of earning above \$8,000 a year. Wanted immediately. Write giving full particulars. Replies held strictly confidential. Refrigeration Division, AMANA SOCIETY, Amara, Iowa.

REFRIGERATION and air conditioning engineer. Splendid opportunity. THE BIMEL CO., 305 Walnut St., Cincinnati, Ohio.

REFRIGERATION ENGINEER having qualifications for research, development, designing, and improvement of our present line, also new products for postwar. At present we manufacture soda fountains, refrigerated food and beverage equipment, etc. Established 1888. Usually good position. Unequaled opportunities. Reply THE FISCHMAN CO., 10th St. and Allegheny Ave., Philadelphia 33, Pa.

COMMERCIAL REFRIGERATION repair or installation men. Only experienced need apply. Highest pay in the industry. Year around work. Apply at 6219 Lincoln, Detroit 2, Mich.

DRAFTSMAN and engineer for heating, ventilation, and air conditioning. KROESCHELL ENGINEERING CO., 215 West Ontario St., Chicago.

SAN DIEGO, California. Wright Refrigeration Service requires first class service men at \$125 per hour with time and half over 40 hours per week. Steady work, lots of overtime, and the best climate in America. WRIGHT REFRIGERATION SERVICE, 1337 India St., San Diego, Calif.

SALES MANAGER. Nationally known automatic control manufacturer has opening for sales manager of refrigeration control division. Must have refrigeration engineering background. State full details, education, work background, and salary first letter. Interview may be arranged. Box 1693, Air Conditioning & Refrigeration News.

SALESMEN: Refrigeration parts supply jobbing house: New York City area; splendid opportunity. Box 1705, Air Conditioning & Refrigeration News.

OPPORTUNITY of a life time for an experienced man to establish and manage a refrigeration and air conditioning supplies department in Texas for a large, well known company. Write full details of your background, giving seven references in the industry. Box 1704, Air Conditioning & Refrigeration News.

SALES ENGINEER experienced on automatic controls like Penn, General, or M.H. Engineer preferred. Work out of New York. Travel New York, New Jersey. Salary plus monthly bonus, expenses. Postwar future. Can earn approximately \$3,600 first year with substantial increase second year. Write giving full particulars. Box 1707, Air Conditioning & Refrigeration News.

### EQUIPMENT FOR SALE

FOR SALE: Carbondale atmospheric type chilling machine in new condition complete with four ¾" pipes, auger, troughs, chain and sproket. BATTENFELD GREASE & OIL CORP., 3148 Roanoke, Kansas City 8, Mo.

500 RE-MANUFACTURED Frigidaire and Kelvinator ½, ¾, 1, and 1½-H.P. air cooled condensing units with new condensers and new single phase 110/220 60 cycle motors. 2 to 12 holes ice cream cabinets. Write for list and prices. EDISON COOLING CORP., 310 East 149 St., New York 51, N. Y.

USED double duty porcelain display cases, coils and platters included, good condition, no priority required. Used ¾-hp. Kelvinator and Frigidaire condensing unit \$100. New General Electric equipped milk coolers, 4-can \$220, 6-can \$260. Porcelain reach-ins, walk-ins. Frosted food cabinets. JORDON REFRIGERATOR CO., 235 N. Broad St., Philadelphia 7, Pa.

### WANTED

Refrigeration or Vending Machine Engineer to set up and operate Parts and Service Department on a national basis. Write pertinent facts about yourself, and a personal interview will be arranged.

Address: Russ Odor—The Seven Up Company, 1221 Locust Street, St. Louis, Missouri.

## PURO ELECTRIC WATER COOLERS

### BRANCHES IN PRINCIPAL CITIES

MAIN OFFICE  
440 LAFAYETTE ST.  
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## PURO FILTER CORP. OF AMERICA

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BUFFALO, N. Y.



## Take New Posts With Refrigerant Firm



JOHN A. SARGENT



JOE MOORE

## Appointments To Staff Announced By Ansul Chemical Co.

MARINETTE, Wis. — Two newcomers to the staff of Ansul Chemical Co. here are Joe Moore and John A. Sargent.

Mr. Moore has just joined the firm and is located at the firm's district office at Indianapolis where he is working with Tom Plouff, district office manager, in the sale of Ansul refrigerants.

Mr. Moore worked with a number

of companies in Evansville, Ind., and more recently was with a refrigeration company as branch manager in lower Michigan.

Mr. Sargent, who joined Ansul shortly before the first of the year, is serving as planning engineer. He was formerly assistant manager of the Menominee & Marinette Light & Traction Co. He is a graduate of the University of Wisconsin in electrical engineering.

## Fiberglas Changes Branch Personnel

TOLEDO—Changes in the branch personnel of Owens-Corning Fiberglas Corp. involving Ben S. Wright, W. H. Atkinson, Frank L. Myers, and Earl Swaim are announced by W. P. Zimmerman, vice president.

Mr. Wright has been transferred to Cleveland as manager of the firm's branch office, 825 Hanna Building. He was formerly manager of the Fiberglas fabrics division in the general offices here.

Since becoming associated with the Fiberglas corporation more than four years ago, Mr. Wright has specialized in field development work extending the use of Fiberglas textiles for such applications as parachute flare shades, and in such war essential markets as plastics reinforcement, coated fabrics applications, and admixtures of Fiberglas with other textile fibers.

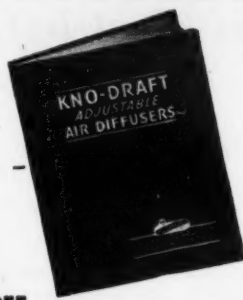
Before joining the Fiberglas corporation, he left the position of store superintendent of the LaSalle & Koch Co. to become manager of Glass Center at the 1940 World's Fair.

Mr. Atkinson becomes manager of the Fiberglas corporation's Chicago branch office, 3206 Pure Oil Building.

Mr. Myers, who has managed the company's Chicago branch office since 1938, will return here to join the general sales organization on the staff of J. H. Thomas, general sales manager. He will be engaged on special assignments in the field of thermal insulation, adapting standard Fiberglas products to new applications.

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IT CONTAINS—Clear sketches, charts, dimension prints and instructive text for quick, accurate SELECTION—APPLICATION—LOCATION—ASSEMBLY—ERECTION—TESTING—ADJUSTMENT of air diffusers and of ACCESSORY EQUIPMENT such as dampers, air equalizing grids, mounting rings and air sectorizing baffles.

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## WALK-IN COOLERS

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## Quotas Are Set For Icebox Production In Second Quarter

WASHINGTON, D. C.—Quotas for production of 74,000 domestic ice refrigerators in the second quarter of 1945 to meet military and essential civilian requirements have been assigned to 17 manufacturers by the War Production Board.

Additional authorizations for the production of 1,000 domestic ice refrigerators, bringing total second-quarter authorized production to the permitted maximum of 75,000, will be assigned later. They will be assigned either to additional manufacturers who have already applied, or to manufacturers authorized already.

Production quotas are assigned only to the extent that production will not require materials, components, facilities, or labor needed for war purposes, said WPB.

The authorized manufacturers and their quotas are:

COMPANY	UNITS
American Fixture & Mfg. Co., St. Louis	2,000
Arctic Refrigerator Co., Brooklyn	3,460
Atkins Table & Cabinet Co., Brooklyn	1,215
Brunswick Refrigerator Co., Brooklyn	2,176
Craftbilt Cabinets, Burbank, Calif.	1,691
Doherty-Stirling, Inc., Baton Rouge, La.	500
Dratch's Victory Refrigerator Box, Brooklyn	1,535
Fy-Boro Metal Products Co., Brooklyn	4,310
Ice-Cooling Appliance Corp., Morrison, Ill.	15,527
Iceland Refrigerator Co., Brooklyn	2,010
King Refrigerator Co., Brooklyn	2,701
Maine Mfg. Co., Nashua, N. H.	9,900
Modern Refrigerator Works, Glendale, Calif.	2,500
Precision Metal Products Co., Brooklyn	1,139
Sanitary Refrigerator Co., Fond du Lac, Wis.	15,000
Stoddard Mfg. Co., Mason City, Iowa	836
Ward Refrigerator & Mfg. Co., Los Angeles	7,500

Of the 75,000 ice refrigerators planned for production in each quarter, 55,900 are for civilian requirements.

### Get These Profits

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Master Manufacturing Corp.

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## REDUCE YOUR OPERATING COSTS WITH THE "LITTLE GIANT" PURGER

The "Little Giant" Purger is an essential item and a profitable investment that quickly pays for itself because:

- It reduces power costs
- It saves expensive refrigerant
- It reduces wear and tear on equipment

When non-condensable gases are present in a refrigerant system, it will operate at higher pressures than it would if these gases were not present. Unnecessarily high pressures result in the compressor being subject to:

- Higher bearing loads
- Higher discharging temperatures
- Increased wear on moving parts
- Greater power consumption

It is particularly important that the refrigeration system be purged after a shut-down period of any considerable time. The usual practice is to pump the refrigerant back into the receiver and lock it in by means of valves. Repairs or alterations are made on the system during this time, and it is practically impossible to evacuate the system completely, with the result that the remaining air will cause excessive head pressures.

### HERE ARE THE ADVANTAGES OF PURGING WITH THE "LITTLE GIANT" PURGER:

- THERE IS NO GUESSING—There is positive indication when purging is necessary. The sight glass gives visible evidence of non-condensable gases in the system.
- NO REFRIGERANT LOSS—The air in the system is completely separated from the refrigerant before the purge valve is opened.
- SIMPLE TO OPERATE—All operating valves easily accessible. Not necessary to check pressures or temperatures. No need to shut down the system.
- POWER SAVINGS—Power savings, due to a reduction in head pressure will pay for the "Little Giant" many times over.
- MANUAL OPERATION—Fully manually operated, there is no possibility of a slow leak developing which would cause a loss of refrigerant before cause is discovered.

Write us for full particulars and instructions for installation and operation

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## Service Firms Can Call Washington For Deferment Aid

(Concluded from Page 1, Column 3)  
tion service contractors take the following action:

(1) Arrange a meeting with representatives of the nearest offices of WPB, WMC, OCR, USES, and Selective Service boards. Information and reports by individuals should be given at this meeting showing exactly what refrigeration equipment they are servicing in their community for the war effort, and a survey prepared to show the situation in that community regarding the amount of equipment to service, the number of experienced men remaining, and any other facts proving why the refrigeration service industry needs assistance. It was also suggested that representatives of local newspapers be invited to this meeting.

(2) Mail to Webster Powell, Room 2345, Social Security Building, Washington, all cases of food poisonings and losses, and examples of lack of cooperation from draft boards or WPB offices.

Another promise of assistance given to the National Service Council was that the U. S. Employment Service will give a high rating to experienced refrigeration repairmen to return them to that occupation from other jobs when they were found to be available, especially in the cases of individuals who may have been forced into other work by local Selective Service boards.



### NATIONALLY ENDORSED

Pad is adjustable to all makes and sizes of refrigerator cabinets; thoroughly protects finish of cabinet from scratches and marks during moving; easily and quickly put on or off; sturdy, lasting construction; easily pays for itself in a short time. Price \$11.75 each.

Attractive lettering of your name on pad at \$3.00 each extra.

For carrying your refrigerator more safely and easily, use the Mastercraft Adjustable Carrying Harness which is a separate unit from the pad and priced at \$8.50 each.

Write for complete folder and prices on pads for refrigerators, washers, ironers, ranges, radios; also furniture pads and protective covers. . . . All prices subject to change without notice.



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## General Electric Gives Department Status To Air Conditioning

(Concluded from Page 1, Column 4)

naval and marine systems, self-contained air conditioners, central plant air conditioners, conditioned air cooling unit finned coil surface and heat transfer assemblies, and evaporative condensers and coolers); the packaged cooling equipment division (including water coolers, room air conditioners, window-mounted room coolers, beverage coolers, commercial food storage cabinets, refrigerated merchandisers and dispensers, and frozen food cabinets in large sizes); and the automatic heating equipment division, which is responsible for domestic heating equipment.

Mr. Prout is a graduate of Massachusetts Institute of Technology, and has been connected with General Electric since 1920, when he enrolled in the various student engineering courses while an undergraduate. Subsequently he represented the company in New England and in the Southwest, and in 1939 was appointed manager of the industrial department for the entire southwest district. In 1941 he became manager of the industrial control division, with headquarters in Schenectady, and in 1944 was assigned to manage the air conditioning and commercial refrigeration activities in Bloomfield.

## General Controls Names Hess as Houston Manager Viking Air Conditioning Ups Factory Space

GLENDAL, Calif. — A. E. Hess has been named manager of the Houston branch of the General Controls Co.

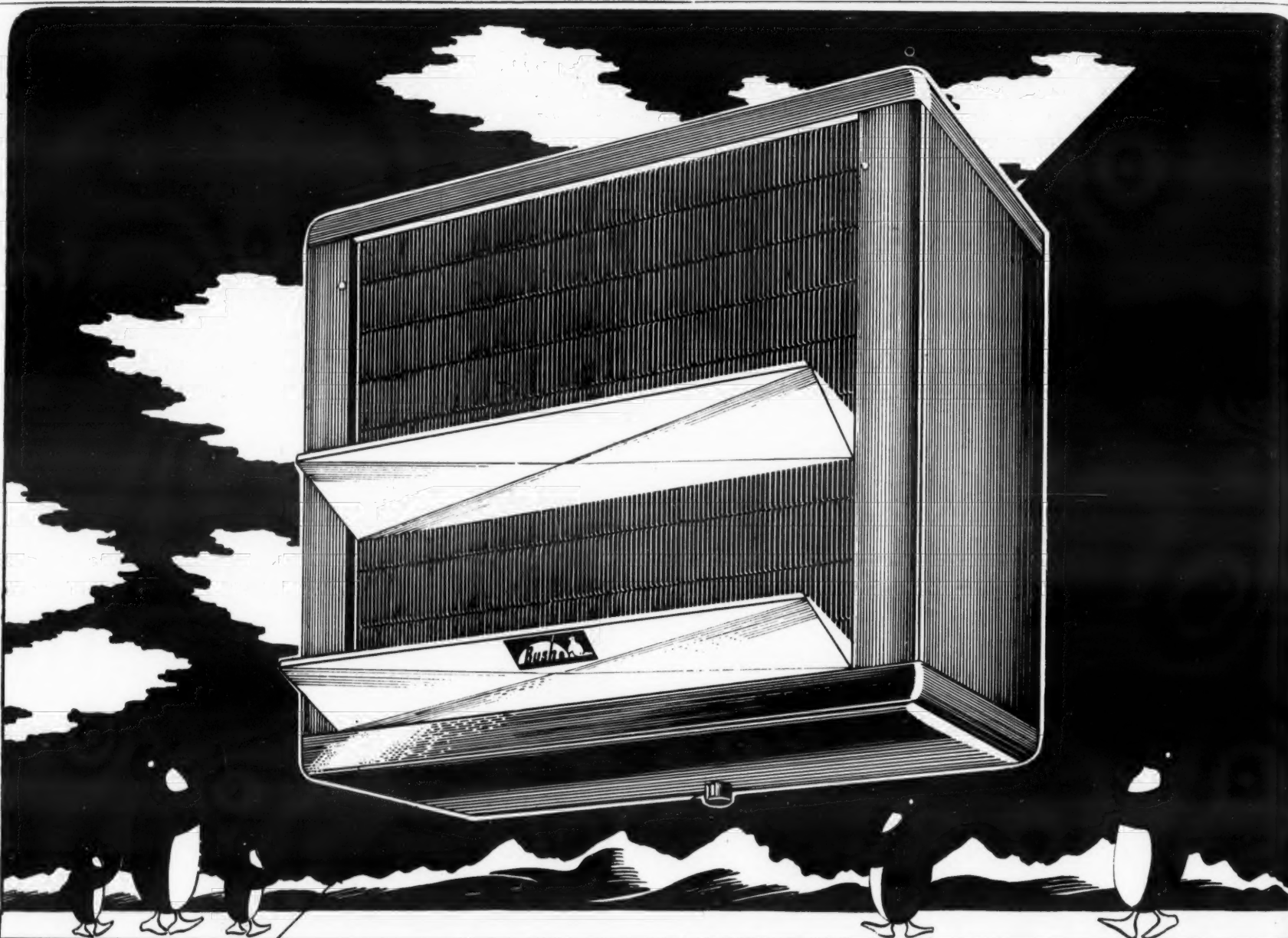
Mr. Hess will devote his entire time to serving users of automatic controls in the heating, refrigeration, aircraft, and industrial fields throughout southern Texas, Louisiana, and southern Mississippi.

Before joining the General Controls Co. in the spring of 1944, Mr. Hess had had many years of experience in the engineering field for such firms as Carrier Corp. and the Johnson Service Co. He also spent several months on special engineering duty for the United States Navy.

CLEVELAND — Plant facilities of Viking Air Conditioning Corp. here have been increased by the addition of another floor to its present building and the taking over of an adjacent building.

Heavy presses for the manufacture of invasion pipe clamps used by the Armed Forces are housed in the new structure. These presses, however, can be converted postwar to aid in the production of Viking blowers, humidifiers, and attic and industrial fans, it was announced.

Viking also plans to arrange automatic assembly line production of its peacetime products after the war.



## Bush STANDARD UNIT COOLERS

Bush Standard Unit Coolers have established an enviable reputation for dependability and low cost operation. New streamlined models feature casings of non-corrosive steel, finished in crackled gray, with rounded corners. There is a size for every purpose — 250 to 1800 BTU

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